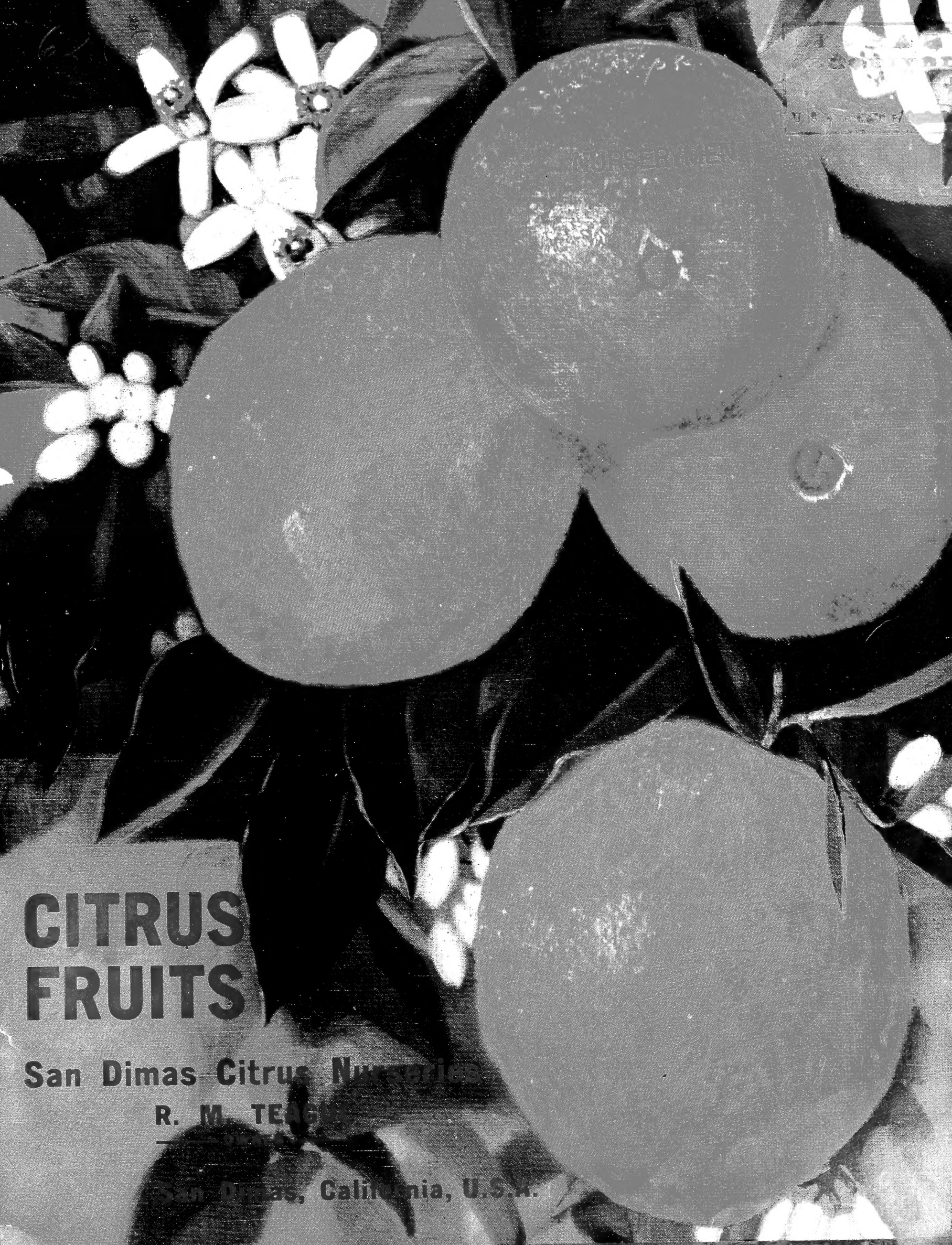


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CITRUS FRUITS

San Dimas Citrus Nurseries

R. M. TEAGUE

San Dimas, California, U.S.A.

The Citrus Fruits

Historically Horticulturally Commercially

A preachment on their culture from the seed to the full bearing orchard, describing methods of propagating, budding, cultivating fertilizing, irrigating, packing and shipping. By R. M. Teague

SAN DIMAS, CAL.:

THE SAN DIMAS CITRUS NURSERIES

One Nine Naught Seven - Eight



A COMPOSITE SPRAY OF CITROUS FRUITS.

MARSH'S SEEDLESS POMELO.
KUM-QUAT.
DANCY TANGERINE

EUREKA LEMON.
RUBY BLOOD.
VALENCIA LATE.

The Money-Making Golden Globes.



THE DELIGHTFULLY FRAGRANT KUMQUAT.

NO one industry has done more to individualize Southern California than the growing of citrus fruits, of which she now produces larger quantities than all of the remainder of the United States combined. And this is not by chance, nor because the industry has found the greatest investments of capital here, but because the soils and climates of this section are peculiarly to the liking of the orange and the lemon tree. To show how thoroughly this fact has become recognized in the markets of the world, it is only necessary to note the onward trend of the industry since it assumed national importance in the annals of trade and the statistical division of the National Department of Agriculture. The figures tell the story more forcibly than mere words:

TOTAL OUTPUT OF CITRUS FRUITS.

SEASON.	CARLOADS.
1891-'92.....	4,016
1892-'93.....	4,400
1893-'94.....	5,871
1894-'95.....	5,022
1895-'96.....	7,575
1896-'97.....	7,350
1897-'98.....	15,840
1898-'99.....	10,875
1899-'00.....	18,400
1900-'01.....	24,854
1901-'02.....	20,397
1902-'03.....	22,425
1903-'04.....	27,899
1904-'05.....	28,000

The monied annual value of the crop aggregates something like nineteen millions of dollars,—a sum so vast as to make of it easily the leading industry of the country. This importance, coupled with the ever increasing demand for good trees and a wider thirst for specific information on the various divisions of the business, has induced us to prepare this booklet on Citrus

Culture, aiming to give in as small a space as possible the practical side of the growing and marketing of oranges and lemons. What is here written will be found reliable and to the point in every detail. We have been especially careful and conservative in our descriptions of varieties, aiming to be plain, concise and to the point. The numerous half-tones, showing views of our large lath houses in which we store our stock preparatory for shipment; also of our seed beds, illustrating the strong and vigorous growth of our seedling stocks, one containing 75,000 Citrus Trifoliata plants, photographed nine months from planting; and the other showing 200,000 Sweet Seedling stock. Those illustrating orchards planted to our trees and those picturing methods of irrigation are direct from photographs, hence true to nature. Of themselves, they form a splendid object lesson in the growth and care of a citrus orchard, and also show that our trees are properly grown in the nurseries to produce best results when submitted to the test of orchard growth. The text which accompanies the illustrations—the instructions on planting, care, etc.,—will be found valuable and to the point.

Long experience has shown us the urgency of keeping our varieties *true to name*, and hence we are at all times anxious and willing to replace, on good and sufficient evidence, all trees that may prove otherwise; nevertheless, it is mutually understood and agreed between the purchasers and ourselves that we shall not at any time be liable for any amount greater or in excess of the original price of the stock at date of sale. Certain it is, the class of trees we grow are good producers of fine fruit. Where one order goes, others are sure to follow.

In conclusion, we wish to thank our friends and patrons for the liberal patronage extended in the past, with the hope that we shall merit their future valued orders.

THE SAN DIMAS CITRUS NURSERIES

R. M. TEAGUE,
PROPRIETOR.

SAN DIMAS, CALIFORNIA, U. S. A.



LATH HOUSE SHOWING 4,000 LEMON TREES (BALLED) READY FOR SHIPMENT.

Timely Suggestions to Intending Purchasers.

HOW TO ORDER.—State specifically the size and variety of trees you want, and also give a few general hints as to your soil and climatic conditions. From unknown parties we demand a remittance or deposit of 50 per cent of order, or good references. Send money by bank draft, post-office or express order, or registered letter.

LOCATION.—The land upon which our nurseries are situated is conceded to be the best for growing citrus nursery stock, producing a fine grade of tree, with a root system of great vigor, making transplanting safe and easy.

QUALITY OF STOCK.—All of our trees are grown to stakes, and are straight and thrifty, budded at the ground and well rooted. Good stock is the foundation of success. He who plants an orange or a lemon grove plants for generations; hence, in choosing stock be careful to get only the best obtainable.

GUARANTEEING TREES.—We guarantee all trees shipped from our nurseries to be as represented. We personally attend to the budding of all our trees, and use the utmost care to insure them true to name.

PACKING.—We pack all trees in the best possible manner, in bales and boxes, according to size of order and distance of shipment. Trees can be sent with safety to any part of the United States or foreign countries. We make a small charge for packing, just sufficient to defray cost. Sample trees furnished intending buyers.

TRANSPORTATION FACILITIES.—Our transportation facilities are excellent, being midway between the Southern Pacific and Santa Fe railways; hence we ship via either road.

SHIPPING INSTRUCTIONS.—Please furnish explicit directions for shipping and by what route. In the absence of any instructions we ship according to our best judgment, but in no case do we assume any responsibility for condition or safe delivery of trees after same have been properly packed and delivered to transportation companies.

PRICE.—The matter of price depends somewhat on size of trees, quality of stock, variety of fruit, etc. We sell according to condition of stock and customer's wants. We grade our citrus stock by caliper, measurement being made one inch above the bud, and thus are able to offer any size that is required. We have buds one, two, and three years old. We have citrus trees of all grades and at all prices and are able to meet competition from whatever source. Prices on application.

BOOKING ORDERS AHEAD.—The demand for trees promises to be unusually active, hence it is advisable for intending purchasers to place their orders early, and thus insure the pick of the stock and be assured of having their wants satisfied. We book orders ahead, and take every precaution to protect our customers, both in the way of reserving the trees as well as in the matter of quality. Write us for prices and particulars.

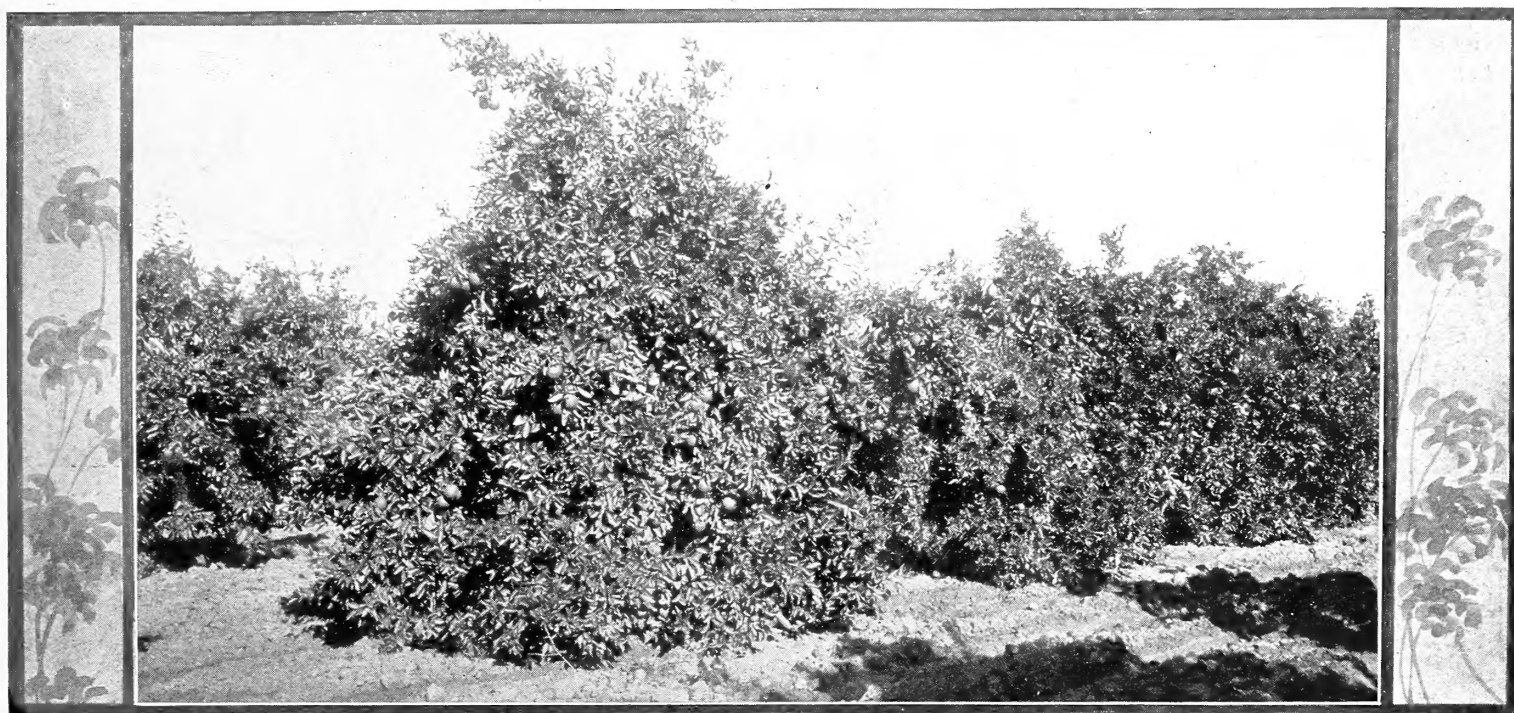
TRUE TO NAME.—Our trees are all budded from bearing trees and every precaution exercised to have them true to name, still with all our caution, mistakes are liable to be made, but we hold ourselves in readiness, on proper proof, to replace all stock which may prove untrue to label, free of charge; or to refund the amount paid. It is mutually understood and agreed between purchasers and ourselves, however, that our guarantee of genuineness shall, in no case, make us liable for any sum greater than that originally paid us for said trees, that prove untrue to name.

The Record of the Past the Promise of the Future.

CITRUS CULTURE in California, like so many other lines of fruit growing, took its inception with the advent of the early Missions something like a century ago. In its beginnings it was sporadic in character,—the few trees of oranges and lemons (more especially limes in the earlier period) that dotted the landscape over widely separated points, usually found an abiding place within the shadow of the Mission Churches or their immediate environs. For the most part they were planted to supply local wants, no attention whatever being given to their culture as an article of commerce. In sort and variety they were also limited, consisting chiefly of the seedling orange and the Mexican lime. This dearth in kinds and sorts was universal—it was as pronounced in the sheltered portions of Northern California, in the great thermal belt of the San Joaquin and Sacra-

when the railroads were completed and made it feasible to ship direct to the Eastern markets.

Citrus culture, as a great force in California's horticultural development, takes its date from about 1870. One year previous to that time, Riverside had already taken the initial steps toward becoming a great orange growing section—a distinction which has been augmented with the years, until it is recognized the center of the industry in the United States. At about the same time many other places were exploiting orange planting. Growing settlements with citrus culture as a basic industry were springing up all over Southern California, but chiefly in the San Gabriel valley. For the most part, these early plantings, when coming into bearing, paid handsome returns. In not a few cases as high as \$2,000 was realized from a single acre, and from \$500 to \$1,500



A HISTORIC WASHINGTON NAVEL ORANGE GROVE, 29 YEARS FROM THE BUD.

This grove was planted to seedling stock in orchard form, and the following year budded to Washington Navels. In the early days of citrus culture, this method was at times resorted to, because buds of the Navel were scarce as well as expensive, and planters sought to gain time by this practice. The buds were taken from the celebrated Tibbet's or parent trees. This orchard has been in constant bearing, and is still a valuable possession. At the time the photograph was taken, the grove had attained the age of 26 years and bids fair to yield the golden globes for another quarter of a century.

mento Valleys, as in Southern California. In so far as progress and development was concerned, there was none from the time of the advent of the early Missions and the period of American occupation. Even after that period the advance was slow and purely local in character, representing small plantings of trees in gardens and limited orchards calculated to meet a local demand for fresh fruit. Some efforts were, however, a feature of the late sixties and early seventies, when oranges began to find their way by ocean vessels to San Francisco and other northern points, chiefly from Los Angeles County. These early shipments were usually sent out in bulk, sometimes in barrels, sometimes in sacks, and at other times in boxes. In the northern markets these brought good prices, which greatly advanced the interest in citrus culture and stimulated planting not a little. The first great impetus to citrus growing, however, took its inception

was not unusual. Naturally an industry yielding returns like this attracted men and money from all sections, with the result that land values increased rapidly and the new acreage, being constantly planted, resulted in a development, the like of which has probably no parallel in the annals of horticulture. A few figures in the rough will tell forcibly the giant strides made in 1890-'91, when Los Angeles County shipped 2,212 cars and San Bernardino County (then including what is now Riverside County) 1708 cars; 1898-'99 when the total cars shipped from Southern California aggregated 15,000, valued at about \$12,000,000. Since that period, the advance has been healthy, though not quite so pronounced. At the present writing, the total shipments from south of the Tehachapi range of mountains will average between 25,000 and 30,000 carloads, valued at about \$19,000,000.



A WASHINGTON NAVEL GROVE WITH A RECORD.

This grove comprises 10 acres, was planted in 1890, in a rich, decomposed granite soil to second-size trees, and by reason of good care has proven a pronounced success. In 1892, the crop sold for \$80.00; in 1893 for \$635.00; in 1894 for \$2,780.00; in 1895 for \$2,840.00; in 1896 for \$4,000.00; in 1897 for \$5,300.00; in 1898 for \$4,100.00 (this was the season of heavy wind storms when the trees lost much of their fruit); in 1899 for \$5,830.00; in 1900 for \$6,000.00; in 1901 for \$6,250.00; in 1902 for \$6,100.00; in the years following exact data is not available, but in the rough the returns averaged from \$6,000.00 to \$7,000.00 annually.

While this development was going on in the Southern Counties, the American spirit of enterprise was not idle in other sections of the State. In the thermal belt of the San Joaquin valley, from the southern portion of Tulare County along the base of the Sierra Nevada mountains, there is a vast area of country adapted to the orange and the lemon. Experimental plantings here and there gave early evidence of climate and soil conditions favorable to citrus culture. Notably true was this of the section of which the town of Lindsay is now the citrus fruit center. As a business proposition, oranges and lemons began to be planted in that locality about fifteen years ago, though experimentally and in a small desultory way citrus fruits were known in that neighborhood as early as 1862-'63. Last year (1906-'07) the shipments from Central California aggregated something like 2,000 carloads. For the most part the fruit ripens earlier than in Southern California, thus insuring an independent market which in no way conflicts with the industry as between one section and another. At present there are about 4,500 acres in bearing and fully 11,000 acres, both young and old, planted out. The quality of the fruit is in every way superb, clearly indicating that California's sunshine, soil and climate are quite as good in one section as in another. The natural supply of water in that

region is ample, and warrants the prediction that at no distant date, orange shipments will be as pronounced from that section as raisins are from Fresno.

Besides these two citrus growing empires within the borders of the State, there is also what is known in the trade as the Northern Citrus belt. For the most part this is somewhat broken up or scattered over several counties, including Placer, Sacramento, Butte, Yuba, Stanislaus, Merced, Sonoma, etc. At particular points in all of the above northern and central counties, there are protected areas free from biting frosts in which citrus fruits find congenial conditions. Thus it will be seen that the orange and lemon, though rated as tropical fruits, yet find a wide geographical distribution in a State which is nothing if not a world unto itself for the growing of almost every fruit of the temperate and tropic zones.

In this development of an industry so great and profitable as the growing of oranges and lemons, there has necessarily been much to learn, not only as to methods and management of orchards, as well as conditions and environments, but also as to varieties, methods of picking, packing, shipping and marketing. The present generation of growers owe a debt to the pioneers of the industry that can never be wholly wiped out. How many

varieties have been discarded! How many "Systems" of pruning, irrigating, cultivating are now only the lore of books! How many dissapointed hopes and ambitions have been blasted by ne'er do well orchards planted in uncongenial situations! What feasts of reason and unreason, what flows of soul and other things have we not heard at meeting of orange growers during the period of development! How many citrus fairs once captivated the public and centered the best thought, practice and product of the growing industry! What learned discussions, both oral and printed, the insect enemies of the tree and fruit have called forth! All these things, elements and conditions about which even the most advanced in the industry were more or less in doubt, have all been satisfactorily solved. It is quite safe to say that the people who make the orange and lemon orchard *pay*, do so because they possess the "Know How." Take the one question of profitable varieties, how the law of evolution has simmered the question down to a very few sorts. "The survival of the fittest" was never more forcibly illustrated than in the supremacy of the California orange and lemon.



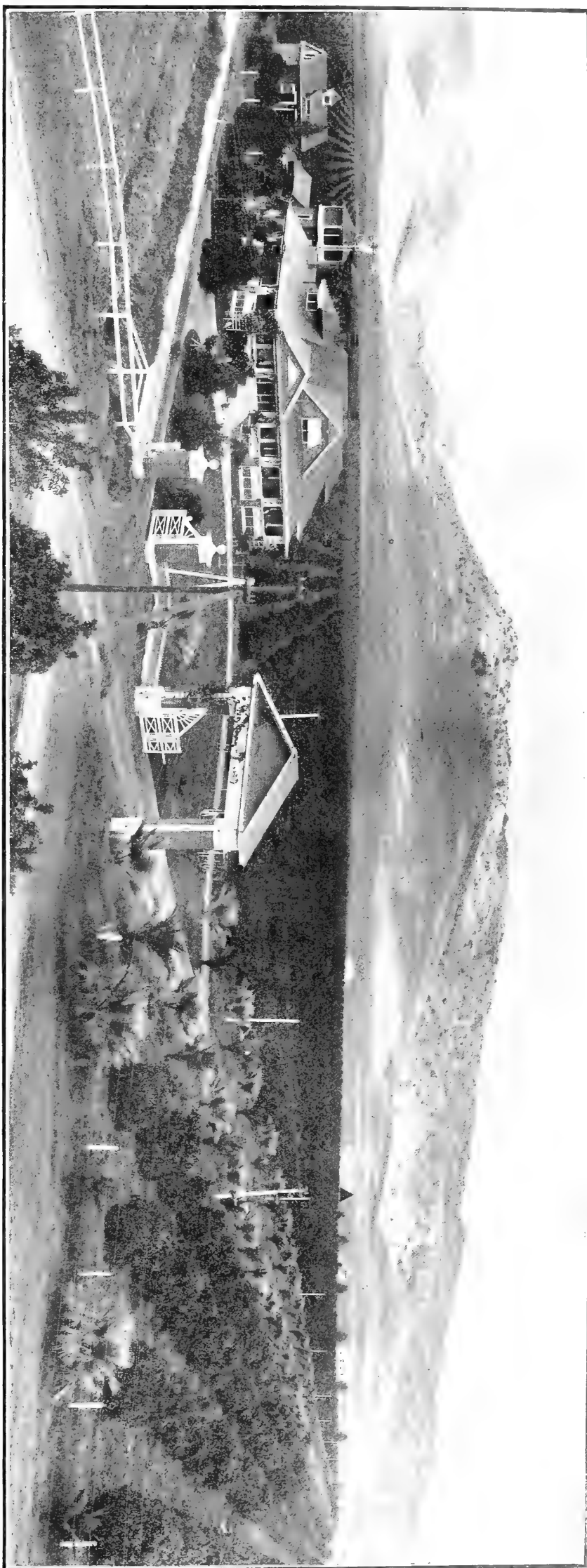
THOMPSON NAVELS FRUITING IN THE NURSERY ROW

Broadly speaking, California at present is producing about 31,000 carloads of citrus fruits, divided as follows:

Southern California	28,000 carloads
Central California	2,000 carloads
Northern California	1,000 carloads

This output represents something like 67,750 acres in bearing trees, valued at about \$200,000,000. The annual value of product is estimated at \$19,500,000, varying more or less with the seasons. The acreage in Florida in bearing is said to be 26,000 acres. There is a small acreage in Louisiana which in no way disturbs our markets. Thus it will be seen that we grow fully 70 per cent of all the citrus fruits in the United States. But beyond this, the significance of California Citrus culture is only to be fully appreciated when we allow for the fact that commercially considered, we are the foremost and greatest producers of the best oranges and lemons in the world. Wherever the California fruit has come in competition with that from other sections it has won its spurs in the exhibition hall and in the market place.

A PRINCELY CITRUS GROVE AND HOME IN CENTRAL CALIFORNIA.



“Citrus Trees for the Million; a veritable sea of nursery trees in rows ready for intending planters everywhere.”



A PLOT OF CITRUS TREES ON OUR HOME GROUNDS.

A FAMILIAR SCENE DURING THE SHIPPING SEASON.

Poets and artists have sung the praises of the orange and lemon in prose and verse for ages, but it has remained for California to sing the praises of citrus fruits in the atmosphere of the market place and to the measure of good American dollars, aggregating into the millions. Were it not for this fact, it would not be possible to present two such striking views as the above, typifying the extent and importance of growing trees, literally by the hundred thousands, to meet the demand for our superb nursery stock. In this connection it is pleasant to note that our efforts to grow a fine quality of tree have been appreciated in all parts of the country where the orange is grown in commercial quantities. Indeed, so pronounced have been our orders, that by the mere force of circumstances we have become the largest growers of orange and lemon trees in the world.

The Growing of a Citrus Fruit Orchard.



THE several operations necessary to the production of nursery trees is a phase of citrus culture with which the average planter of an orange or lemon grove has little to do,—he usually finds that his chief interest in the rearing of a successful orchard takes its inception in the purchase of trees from the nurseryman. In spite of that fact, however, the production of good trees appeals to him from an educational view

Allowing for these conditions (which must be met before the success of an orchard can be assured) it will not be out of place to give a graphic description of the methods which have made the trees produced by The San Dimas Citrus Nurseries famous wherever citrus fruits find congenial conditions. For the most part the methods here described are general in character, though with us they have proven prolific of the best results in the growing of citrus trees sure to yield bountiful and profitable crops, provided the conditions of soils and climates are at all favorable, and where



ONE-YEAR OLD SEED BED PLANTS.

point: it affords an insight to the care essential for the growing of profitable trees, and also gives emphasis to the importance of planting only reliable true-to-name nursery stock. The growing of good plants along commercial lines is at best a matter fraught with some risk, much care, experience and knowledge of plant growth, as well as an appreciation and an enthusiasm for the business. When we allow for the fact that it takes from three to four years to produce a merchantable citrus tree, and that it requires three to four additional years to bring the tree into bearing, the importance of good stock is at once obvious. To these basic considerations the cost of land and care must be added in order to fully appreciate the momentous undertaking of planting and bringing an orange grove into profitable bearing.



TWO-YEAR OLD SEED BED PLANTS.

intelligent care and management has been given the trees. Let us view the subject at closer range.

EXTRACTING SEED.—There are several methods in general use for extracting seed, but the most rapid way is to use some kind of a home-made machine for thoroughly crushing the fruit, then using a screen of coarse mesh for separating the seed from the pulp. It is very necessary that the seed should be thoroughly washed and cleaned free from pulp. If not thoroughly washed and cleaned it is apt to sour the soil where it is planted, causing the young plants to “damp-off” after they have germinated and started to grow.



PLOT OF 100 000 FLORIDA SOUR SEED BED STOCK SOWN IN DRILLS.

PRESERVING THE SEED UNTIL READY FOR USE.—To insure good results the seed should not be allowed to become dry after being taken from the fruit, but should be healed in moist sand in a cool place, or kept in water, and changing the water frequently to avoid having the seed sour. It can be kept for a considerable length of time by either of these methods. Great care must be taken in handling the seed so as not to bruise it to any extent.

PLANTING THE SEED.—The best season in the year for planting orange seed is in the early spring months, much depending on the season; preferably from March to May. If the soil is cold the seed is apt to decay in the ground before germinating.

It is much better to wait until the warm weather has commenced. The ground should be kept moist after the seed is planted so as to insure its germinating properly.

PREPARING THE SEED BED.—In preparing the seed-bed for the seed, the ground should be well plowed or forked up to a depth of at least twelve inches, leaving the soil as loose as possible. After preparing the land in this manner, it is necessary to erect a lath house of sufficient size to cover the ground to be used for a bed, or to cover same over with burlap or light cloth of some kind. In erecting the lath house, it is best to use common plaster laths, nailing them on 1x3 battens with space left between each lath the width of the lath. In this manner the ground is



PLOT OF 200,000 SWEET SEEDLING SEED BED STOCK SOWN IN DRILLS.

half shaded, which is sufficient for the protection of the plants after they begin to grow. If it is undesirable to go to the expense of a lath house, the bed can be successfully covered at much less expense by putting up stakes at intervals and stretching wires on them. On these wires should be strung strips of burlap or light cloth. This protects the young plants from the sun.

There are two methods of sowing the seed, the first being by broad-casting. After the seed is scattered, it should be covered to a depth of about one inch with sand which has been thoroughly screened before using. It is also a good plan to first cover the seed with about its own thickness of fine sifted soil before applying

If the bed has been properly cared for and the season favorable, the plants should be ready for removing to the nursery the following season, or one year from the time the seed is planted, though if desirable they can be carried two years in the bed before being removed and with good success. In this way a much larger lot of plants would be secured. It is not best to plant very small seed-bed stock in nursery form, it being too delicate to successfully withstand the open rays of the sun and is apt not to start readily in the nursery, if at all. Where the removing of the plants from seed-bed to nursery can be delayed, it is best to leave them two years, as the stocks vary in size. If desirable, the larger

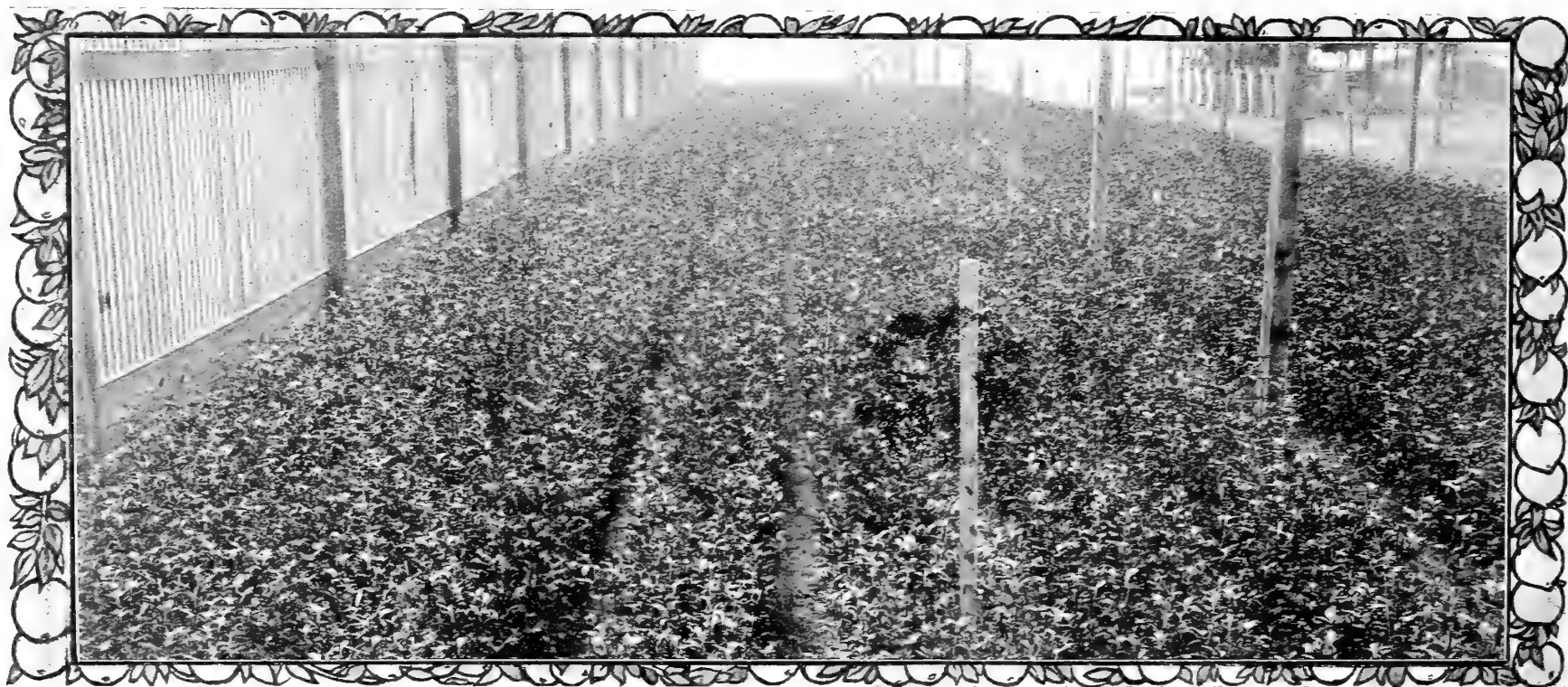


A BLOCK OF 100,000 SEEDLING CITRUS TREES, ONE YEAR FROM PLANTING, READY FOR BUDDING.

the sand. This will insure the seed being moist at all times and will greatly help in the germinating process. In following the above method of planting it is necessary to sow the seed in beds, leaving small walks of sufficient width so a man can go through to spray properly when necessary with a garden hose, and without damage to the plants. The second method of sowing the seed is in drills of from eight to twelve inches wide, leaving about a six to eight inch space between each drill for the running of water in irrigating. Seed sown in this manner will grow stockier plants as a rule than by the broad-cast method in beds. However, it takes up more room for a bed of an equal number of plants than by the broad-cast method. After the seed is planted it is necessary to keep it sufficiently watered for the germinating and starting of the plants, but not an excessive amount of water. If too much water is used, it is apt to decay the seed in the ground.

plants can be removed from the bed the first year from the seed, and the small ones left in the bed another season. As the remainder will then be thinned to some extent, the plants remaining in the bed will do much better and make good stocky plants at the end of the second year.

TRANSPLANTING THE SEED-BED PLANTS TO NURSERY ROWS.—In taking up the seed-bed plants for nursery planting, it is well to thoroughly wet down the bed so as to insure getting all the root system possible, and in loosening the plants it is best to use a four-tine spading fork. After they are thoroughly loosened they can be taken up and made or sorted in two grades, or the larger ones can be pulled out, leaving the smaller ones remain in the bed over another season. If the entire bed is to be used at one planting, it is best to make two grades and plant



SEED BED CITRUS TRIFOLIATA NINE MONTHS FROM PLANTING—75,000 PLANTS 12 TO 20 INCHES.

in nursery form separately. In this manner, the small plants can be given extra attention and budded to some strong-growing sort to make up for the deficiency in size at the start. It is very necessary in removing the plants from the bed not to allow them to become exposed to the wind or sun, hence as soon as sorted pack immediately in damp moss and box securely until ready for the nursery. It is also a good plan to cut the ends of the tap roots off slightly so they will not double up at the bottom when planted and cause the tap root to become crooked. A good method to follow is to take from twenty-five to fifty plants at a time, and by using a sharp tool of some kind, the roots can all

be cut off at one stroke. It is also essential to cut the tops back in proportion to the roots. The quickest and best method is to take a pair of hedge shears and trim up the bed to suit before removing. After the plants are topped and forked up and packed, they are ready for the nursery.

PREPARING THE GROUND.—The nursery ground should be thoroughly plowed and left as smooth as possible with a drag of some description to answer the purpose. After the ground is prepared to suit, it should be laid off in rows, which can be done as follows: stretch a wire the full distance of the field where the



LATH HOUSE CONTAINING 10,000 BALLED TREES READY FOR SHIPMENT.

nursery is wanted, the ground having previously been staked off in rows the desired distance apart, and over the wire run some kind of an implement to mark off the distance apart the plants are



CITRUS TRIFOLIATA SEEDLING STOCK.

Nursery rows nine months from planting.

to be set. An implement of this kind can be made by taking a wheel and nailing or bolting on to it at intervals the distance apart the plants are to be set small cross pieces of wood or iron. This, when run over the wire, will make impressions in the ground where each plant is to be set. The ground should be moist enough so as to open properly when using a sharp tool or dibble for the purpose of placing the roots of each plant in the soil. After the marker has been run over the wire, it can then be taken up and moved to the next row or stakes where the row is to be, and thus be out of the way of the workmen in planting the one previously marked. The usual distance apart for setting the plants is from twelve to eighteen inches, with the rows four feet apart. It is best to have the rows four feet or more apart so as to allow ample room for cultivation without breaking off any of the young buds, and also room for a small sled to be run between the rows in taking the trees to the ends of the rows when ready for market. Planting too close together in the rows, is apt to make the trees inferior in size, and if it is intended to ball stock planted in this manner, it is not possible to cut out as large a ball of earth with the root system as it would be if planted further apart.

PRUNING THE NURSERY PLANTS.—Plants should be pruned but very little the first six months after being set in nursery form. It is a better plan to rub the sprouts off with the thumb and finger up to four or six inches above the surface of the ground during this period. This space leaves sufficient room for budding purposes. If the plants are thus properly sprouted from the beginning, it will not be necessary to use a pruning knife but little at a later period.

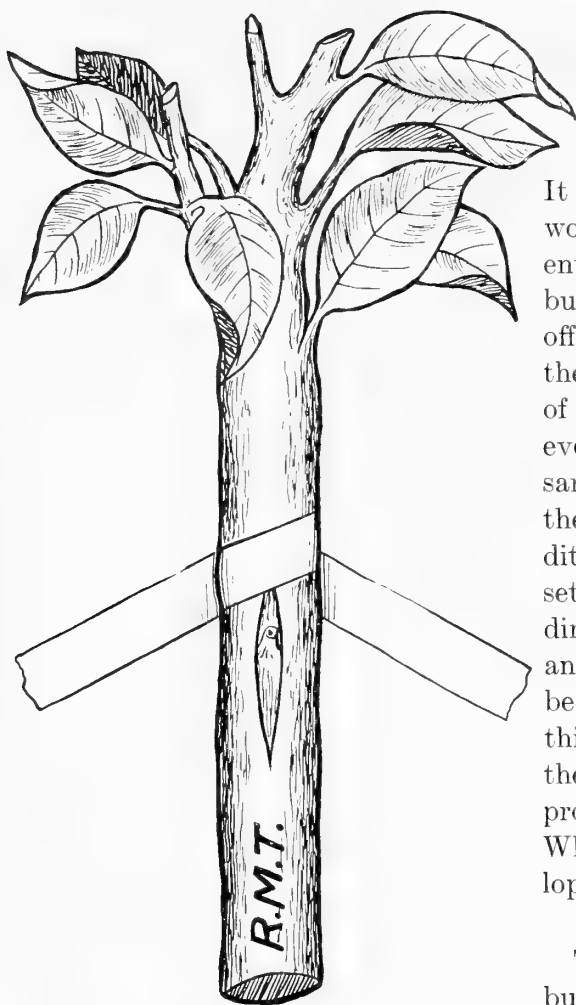
BUDDING.—If a good quality of plants have been set, and the season favorable, they will be ready to bud the following fall

after planting; on the contrary, if conditions have been against the plants, it is sometimes necessary to carry them two years in the nursery row before budding. Nursery stock of this kind is usually budded in the fall of the year, from September to December, much depending, however, on the condition of the weather and the plants. By experience it has been found that Citrus Trifoliata plants, being of a somewhat deciduous nature, should be budded early in September to insure a good stand of buds. The sap goes down in this variety earlier than in other seedling stocks. Sweet Seedling and Sour Orange stocks can be budded later, with the Seedling Pomelo and Rough Lemon stocks much later than either if desired. In spring budding, to insure a good sized tree, it is best to bud as early as possible or just as soon as the plants are in condition to admit of the buds being inserted in good shape. Fall buds are preferable owing to the fact of their being established in the stock, and will thus start to grow on the first flow of sap in the spring. They have the advantage over the spring budding by about one or two growths. To insure the buds starting immediately, a great many nurserymen follow



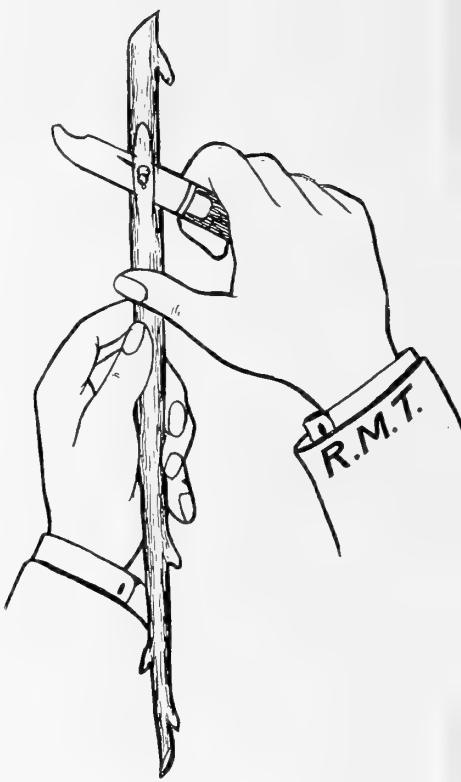
A PERFECTLY GROWN ONE-YEAR BUDDED TREE.

the system of cutting the seedlings off anywhere from two to six inches, directly above the bud. This will force the entire flow of sap in the young bud and it will grow much more rapidly. This method also has a tendency of forcing all the buds out evenly.



1 A STICK OF BUD WOOD.

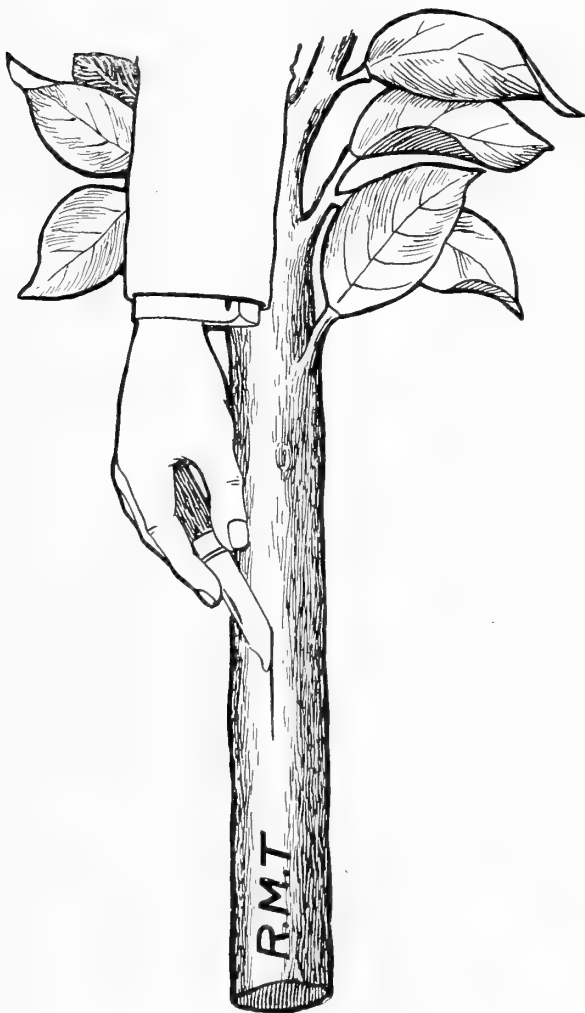
It is unwise to follow this system in late spring budding, as it would be apt to cause too great a shock to the tree to cut off the entire top when the full flow of sap is running. If the spring budding is late, it would be better to lop the tops, cutting them off about half way through and from two to three inches above the buds, bending two rows together. In this way it will admit of the full flow of sap and at the same time starting the buds out evenly. After the budding has been properly done, it is necessary to leave the strings or wax cloth, whichever has been used, on the trees from twenty-one to thirty days, depending on the condition of the stock and the weather. After buds are thoroughly set, tops can be cut off or lopped. (See Fig. 8.) In spring budding, if the weather has been unfavorable to bud the trees early, and the season rather late, it is unwise to cut off the tops entirely, because apt to cause a souring of the sap. It is much better in this case to lop the tops until the buds are large enough to carry the full flow of sap, and the tops so lopped will also serve as a protection to the young buds from the scorching rays of the sun. When buds have attained a height of from 12 to 18 inches, the lopped tops can be cut off entirely and removed from the nursery.



2 CUTTING THE BUD

6 INSERTED BUD READY FOR TYING.

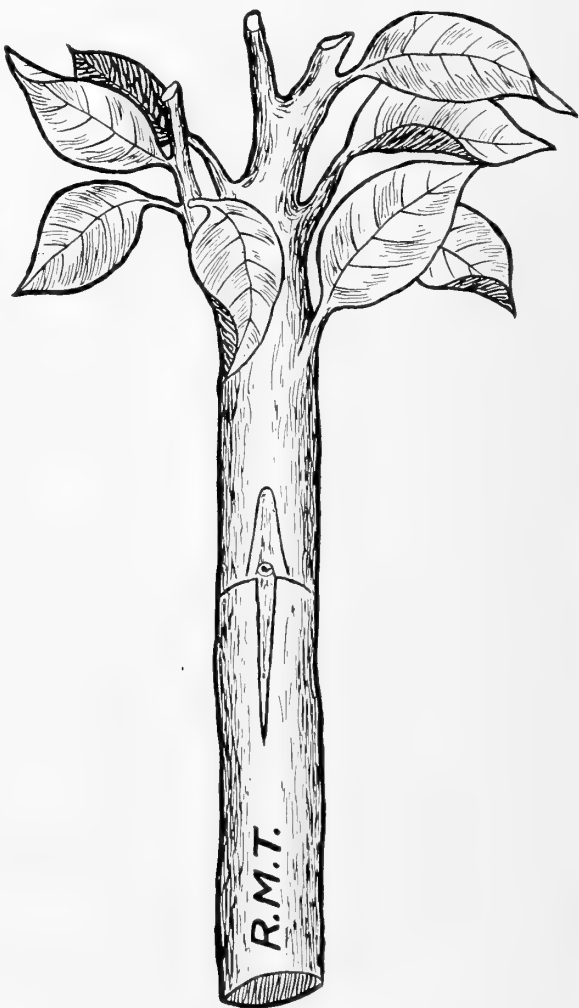
TRAINING THE BUDS.—It is necessary to stake a young bud before it begins to lop over with its own weight; it should



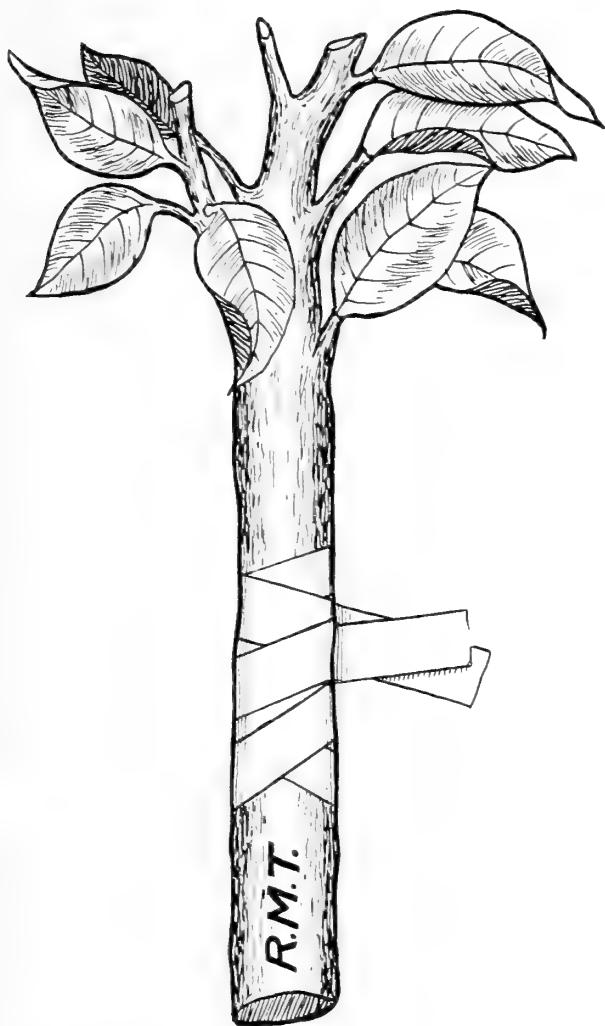
3 VERTICAL INCISION.



4 TRANSVERSE INCISION.



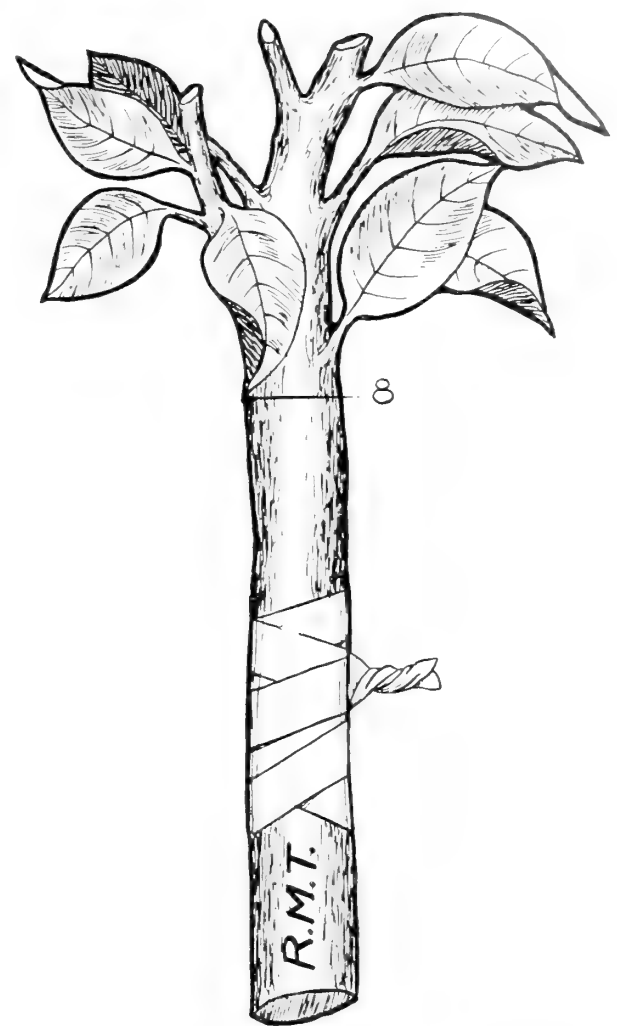
5 INSERTING THE BUD.



7 WAXED CLOTH READY FOR TWISTING.



9 BUD STAKED AND TIED



8 WAXED CLOTH TIGHTLY TWISTED.

then be tied to the stake at suitable distances with string or raffia, the latter being preferable, because cheaper and easier to handle. The strings should be placed every four or six inches up the stake and tied directly under the leaf. If tied over the leaf, it is apt to cause the young stem to bulge out underneath and make an ill-shaped tree. After the buds have attained the height of eighteen inches and have hardened up sufficiently, they are then in a condition for the seedling stump left after the lopping to be sawed or cut off just over the union of the bud with the seedling stock. (See Fig. 9.) This will force the entire growth into the tree. The stump is then painted, waxed or covered with shellac to prevent cracking or drying up by the weather. After the seedling tops have been cut off or lopped, there will be a great many suckers or sprouts forced out, which should be removed by thumb pruning. In training the young tree to a stake, it is necessary to keep all such suckers or sprouts removed until the tree is of sufficient height to head when the top can be cut off at the desired height to force out shoots to form the head of the regular nursery tree for orchard planting. It is customary with us to top all of our trees at a height of thirty-three inches, allowing them to limb down nine inches. This leaves a space of twenty-four inches from the lower limbs of the tree to the surface of the ground. Of late years the trade prefers a lower headed tree than formerly. This method of topping makes a tree much stockier which will withstand the wind much

better. A low headed tree of this description also has the advantage of shading its own trunk from the rays of the sun when it is young and tender and in its first stages of development.

PRUNING A NURSERY TREE FOR ORCHARD PLANTING.—Before the tree is removed from the nursery to the orchard it should be properly cut back. This usually consists of lopping off about one-half of the top, though some allowance must be made for condition of the tree, if balled or open roots, and the weather. It is of great importance, however, that the tree should be properly pruned before transplanting. Too much foliage will cause a greater evaporation than the roots can stand.

METHODS OF TRANSPLANTING.—There are two methods of transplanting nursery trees to orchard form, viz., the open root and the balling system. In following the former method a trench is first dug along side of the tree to the depth at which the top roots are to be cut. The soil should be well irrigated before the tree is taken out to avoid breaking any of the fibrous roots or disturbing any of the root system during the process of removing the tree. After the trench is dug and the tap root cut, a spade is forced down on the opposite side of the tree from the trench at a sufficient distance away to avoid disturbing any of the root system; the tree is then pried carefully into the trench and the earth shaken off the roots. The roots should



ONE-YEAR-OLD BUDS BALLED AND STORED FOR CURING.



FRUITING VALENCIA LATES ON TRIFOLIATA STOCK TWO YEARS FROM BUDDING.



EXHIBIT OF THE SAN DIMAS CITRUS NURSERIES AT THE ST. LOUIS WORLD'S FAIR READY FOR SHIPPING.

immediately covered with a wet cloth or burlap to protect them from the sun until the tree can be carried out to the end of the nursery and loaded in wagons or taken to the packing house. Before boxing trees taken up in this manner or loading them on wagons to be hauled away, it is a good plan to dip the roots into a mixture of earth and water of about the consistency of paint. This will cling to the roots and thoroughly protect them

from the sun. A place to dip the trees can be prepared by digging a hole in the ground some two or three feet deep and of the width required, pouring in water and stirring with loose earth until the right thickness of the mixture is obtained.

The tree is now ready to be packed in wagons or boxes for shipment by freight or express. If it is to be planted in the near neighborhood, it is packed in damp straw in wagons, but if for



PORTLAND WORLD'S FAIR EXHIBIT OF THE SAN DIMAS CITRUS NURSERIES BEFORE SHIPPING.

shipment it is removed to a shady place or packing house and there carefully packed in damp moss in boxes. In loading in wagons, after the roots are well covered or packed in wet straw the tops should be covered over with a canvas or something of this description to keep off the wind and sun. A great many planters prefer their trees taken up in this manner as it insures a much larger root system.



A PERFECTLY GROWN TWO-YEAR BUDDED CITRUS TREE.

After the holes have been properly dug in the orchard, the driver hands out one tree at a time to the planter, who holds it in position for planting. During this operation one or two men are employed to fill in the hole with good soil while all the time the planter spreads the roots out carefully in their natural position. The earth for filling in must be moist so the roots will not be dry by the time the water is applied. After they are covered to a sufficient depth, the planter presses the soil carefully around the tree and it is then ready for the water, which should not be more than fifteen to thirty minutes behind the planting. The sooner the

water is applied the better it will be for the tree. The soil around the tree should be thoroughly wet to insure it being properly settled around the roots. After the tree has been irrigated, it is necessary to go over it again before the ground is thoroughly settled to straighten it up in its natural position, as the settling of the earth is apt to cause it to lean out of line. After the tree has been thoroughly irrigated it is necessary to go over it again with the water in the course of from eight to fifteen days, depending on the condition of the soil and the weather. After this, all conditions being favorable, it will stand thirty days between irrigations.

In following the balling method of transplanting, a trench is dug alongside of the tree within six inches of it and to the proper depth, the tap root then being cut off at the length desired. With a sharp spade the ball then cuts the earth away from the tree leaving whatever is required for the proper size of the ball. This leaves the roots undisturbed. The ball then carefully lifts the



BUDDED TREES TOPPED TO FORCE HEADING OUT,

tree out of the trench and places it on a piece of burlap cut to the required size while his assistant carefully lifts up the ends of the burlap around the top of the ball and ties it up with binder twine or something to answer the purpose and of sufficient strength. By this method the ball is kept from breaking or being shaken up in handling. In some cases, where the seedling stock budded is very large, it is necessary before tying up the ball to cut the tap root off even with the bottom of the ball with long-handled pruning shears. When trees are balled, they will seldom wilt or lose their foliage. The planting of balled trees is carried on in very much the same manner as the open root method, with the exception that it is not necessary to have the water applied so soon. The ball will hold the moisture for quite a length of time. It is best, however, to put the water on as soon as possible, but it is not near so important as with the open root trees. Trees can be handled with much more safety by the balling method of transplanting, and with less risk of loss after transplanting.

LAYING OFF THE GROUND FOR PLANTING.—When the nursery trees are ready for planting in orchard form, using a five acre plot for example, planting twenty feet apart on the square method, it will be necessary to run three headlines, one

across each end and one through the center, putting in stakes every twenty feet, commencing at one end first and leaving plenty of room between the first row and the end of the plot for turning purposes in cultivation. After the headlines are run across each end it is necessary then to stretch a wire lengthwise of the plot, being careful to have it perfectly straight. After this is done stakes should be set every twenty feet along the wire, which will mark the center of the hole to be dug. After the plot has all been staked off in this manner and the holes dug

can be planted at any time in the year when the conditions are favorable, and this is determined by the condition of the tree and the season. The orange tree makes several growths during the season, varying in number and season with different varieties and different seasons. But there are periods when all orange trees are dormant, and others when nearly all are active. In transplanting, the trees should be taken at their dormant stage, or as nearly so as possible, as the shock of removal will not then be so severe and the tree will more quickly recover."

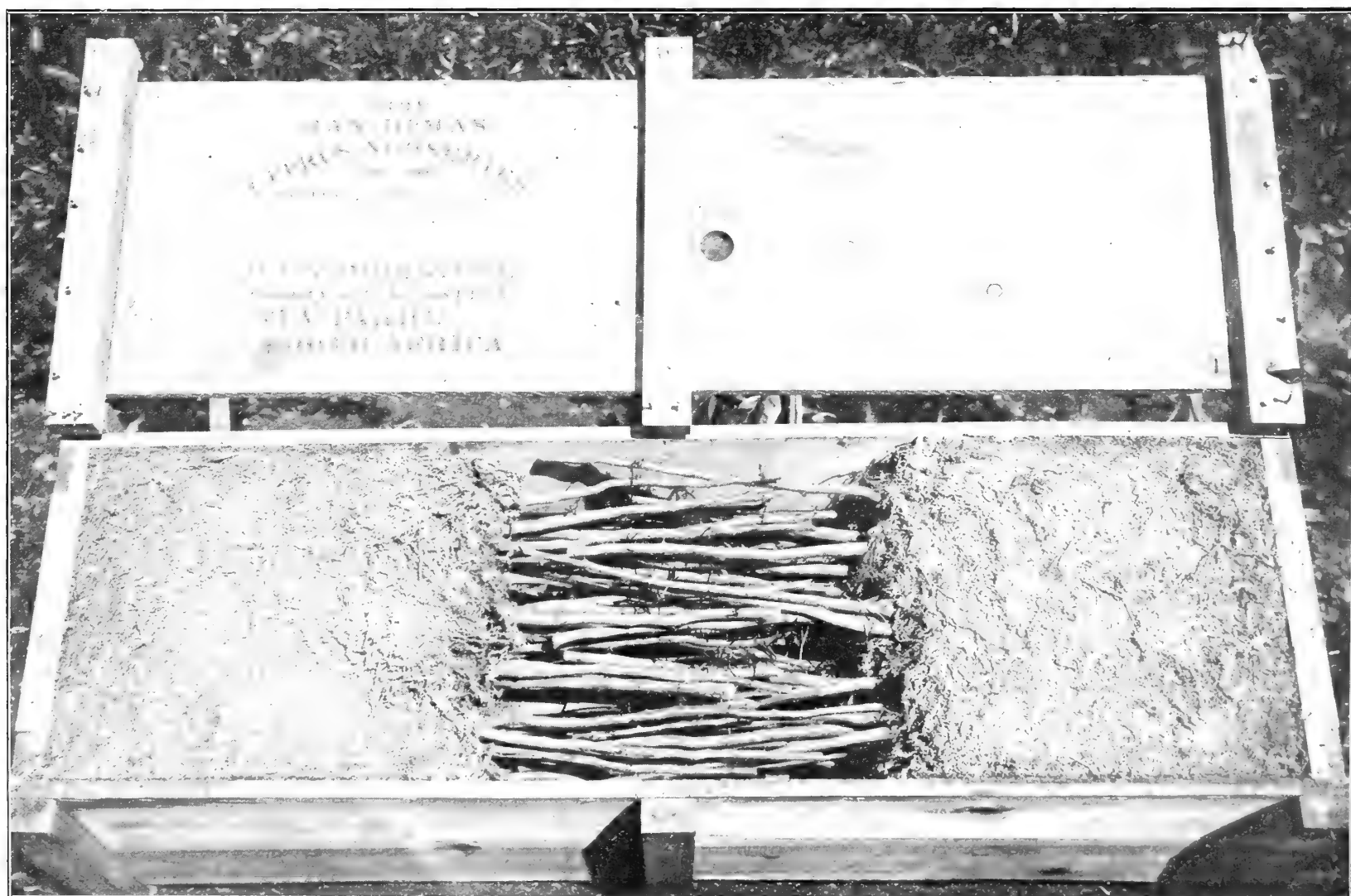


PACKING CITRUS TREES WITH OPEN ROOTS IN MOSS FOR SHIPMENT.

with the necessary preparations for planting, a board should be taken—something about 1x4, three to four feet long—with a notch cut in the center of one side and one at each end. The center notch should be placed where the tree stake stands with smaller stakes at each end before the holes are dug. This will admit of removing the center stake while digging the hole, and in planting the board can be placed over the hole with the notches on each of the end stakes, the center notch being where the body of the tree should stand. This board should be left on the tree while filling in the earth, and by following this method all of the trees will be perfectly in line by straightening up after irrigating before the soil becomes packed.

TIME OF PLANTING.—The following from "The Orange in California" is to the point: "The orange, being an evergreen,

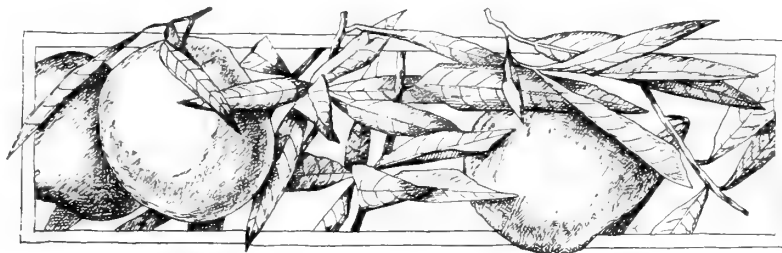
THE LIFE AND BEARING CAPACITY OF THE ORANGE.—Under favorable conditions the orange is a very free bearing tree. Wallace mentions a tree in St. Michaels that bore 20,000 fruits in one crop. The longevity of the tree is not less remarkable. At Versailles one tree is still growing which was sown in 1412, and the famous tree, now upwards of 35 feet in height, in the convent of St. Sabina, at Rome, is said to be more than 600 years old. Some commentators suppose that the "Apples of Gold" were oranges; but there does not seem to be any definite evidence that the orange was cultivated in Palestine in the time of Solomon. More than 700 years later Theophrastus, however, describes the citron as occurring in Northern Persia (Media), and as being cultivated by the Jewish nation in Syria, while under Roman dominion. Locally, there are a number of orange seedling trees over a century old.



UPPER VIEW—BAILED CITRUS TREES READY FOR SHIPMENT.

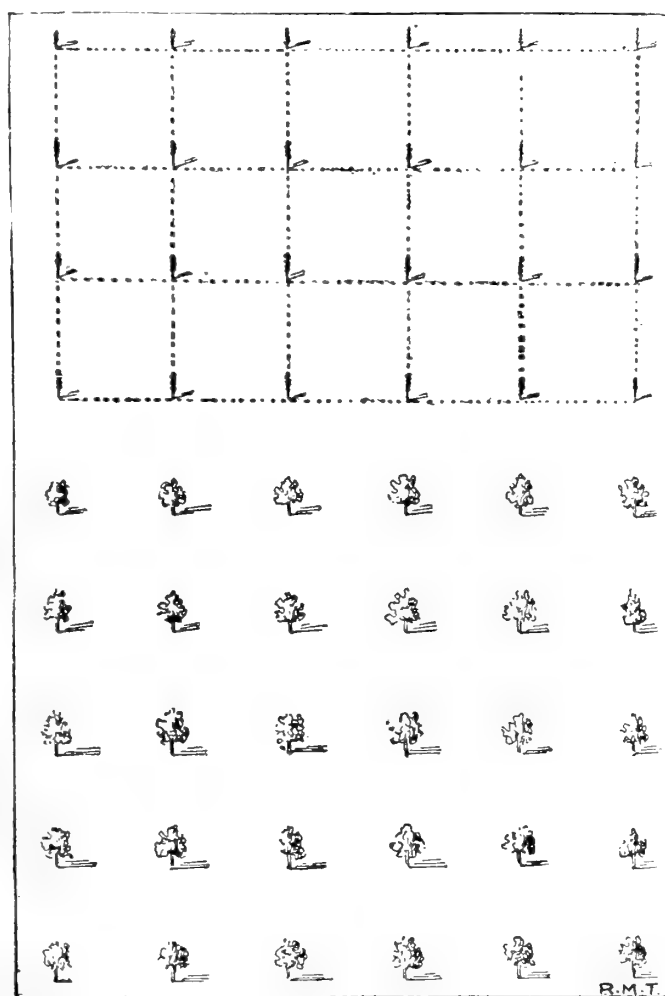
LOWER VIEW—PACKED FOR EXPORT, OPENED 65 DAYS AFTER SHIPMENT; NOTE THE YOUNG GROWTH STARTING.

The Call of the Soil and the Trees.



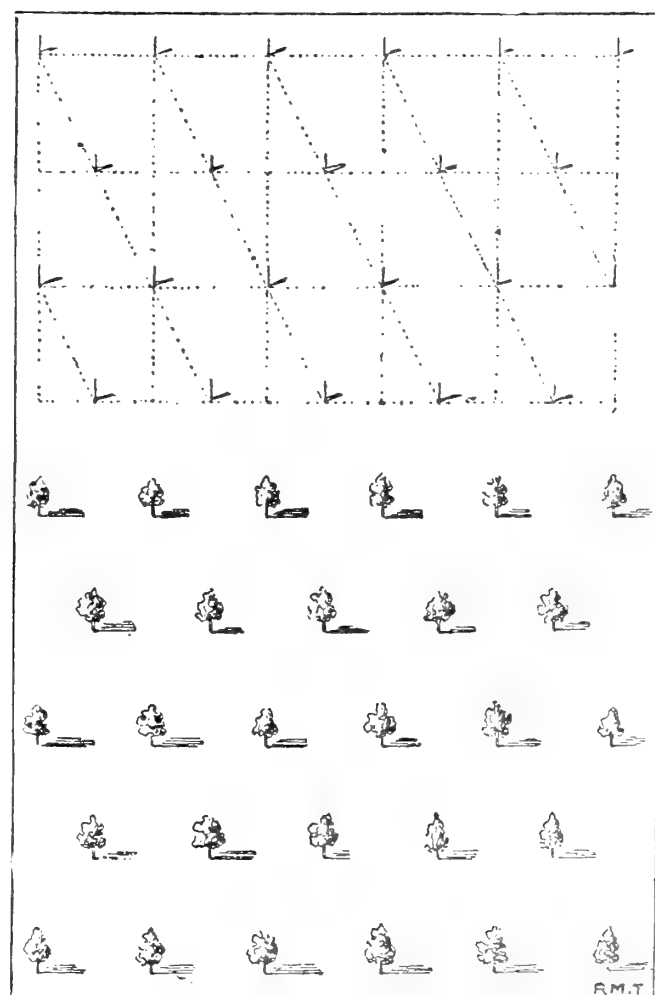
SOIL AND SITUATION.—The following from Wickson's California Fruits will be found a safe guide, which gives a general idea as to soils, climatic conditions and water supplies essential to successful citrus fruit culture: "The soil should be a rich alluvium formed from granite and limestone. A hard-pan subsoil should be avoided, while strata of sand and

sediment surface is good; in fact any kind of soil easily pulverized. The surface of the country should have a southern exposure, and, better still, be backed on the north by high hills, and should be reasonably free from winds and frost. The hotter the locality the better. An altitude from 800 to 1600 feet is best. Be sure to have an abundance of water that can be relied upon for ir-



TREES PLANTED ON THE SQUARE SYSTEM.

gravel are objectionable. A red subsoil, commonly called clay, formed from disintegrating granite, well rotted, is best. The subsoil should be fine, but of a nature to allow water to pass freely through it. It should be deep and rich, with water not less than 30 feet from the surface. In the light of later experiments, covering a wide range of soils, it has been found that citrus trees budded to the sour stock (*Citrus Bergadiah*) or *C. trifoliata* will do well on soils where the water is close to the surface. The surface of the soil should be of a sandy nature, so as not to bake after irrigation. Coarse sand and granite are not objectionable on the surface, provided the subsoil is right. A

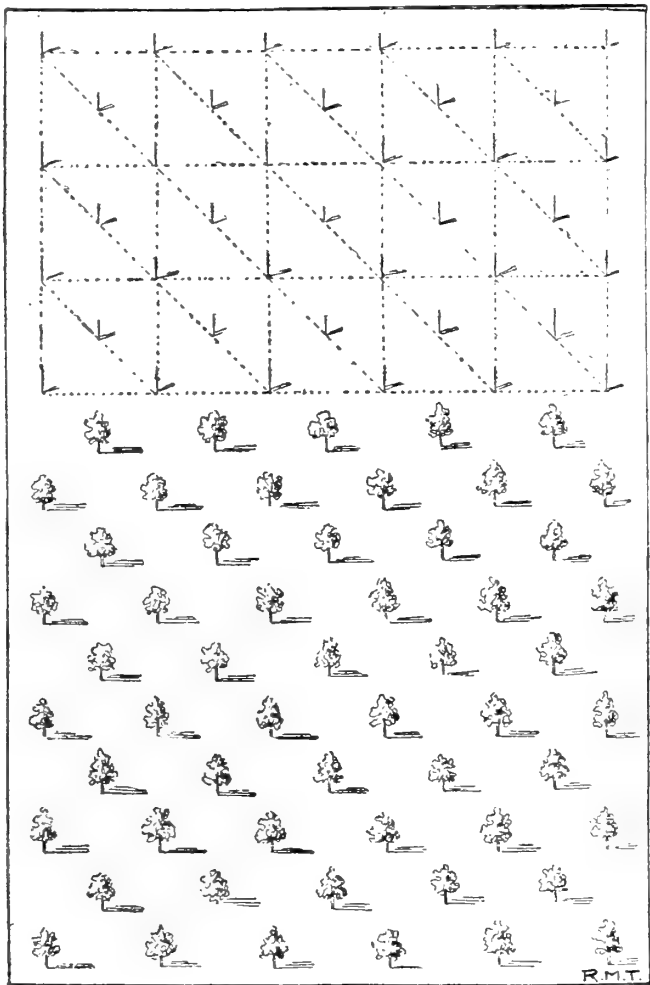


THE TRIANGULAR OR ALTERNATE SYSTEM.

rigation—at least one inch to every five acres of orchard; more will be needed when the orchards grow old."

PREPARING THE LAND.—The following excerpts are from the same authority: "Preparation of land by deep and thorough cultivation and laying off to secure straight rows by the square, quincunx, and hexagonal methods, should be carefully observed. * * * The orange, in common with other evergreen trees, is exceedingly sensitive to exposure of its roots, and for this reason the handling of young trees is very different from that of ordinary orchard trees. * * * Exposure of the roots, or carek-

planting, will consign the tree to a slow, sickly growth, and often kill it outright."



THE QUINCUNX SYSTEM.

THE TREES.—In making a selection of your trees, be careful to secure only the best; a poor specimen is an expensive luxury even as a gift, and will never repay cost of care and cultivation. Bear in mind that we put out only clean, healthy, well grown and vigorous stock, true to name and up to every requirement calculated to produce with reasonable care and cultivation, profitable crops of merchantable fruit. This purchasers can always depend on. Our total acreage in trees is now over 100 acres, all of which is devoted exclusively to citrus trees of our own growing.

SETTING OUT THE ORCHARD.—Having the right kind of soil in the proper condition, with true-to name and well-grown trees, we may with safety proceed to plant. In doing so, exercise care in having your orchard symmetrical in order to economize the area to be planted. There are several methods or systems whereby this may be attained, and in order to make them clear and better understood, we here present illustrations of square, quincunx, hexagonal and triangular methods.

THE SQUARE SYSTEM.—This is the most approved method. The orchard is laid off in lines crossing each other, with equal intervals of space, and a tree is planted at each crossing of lines. By the square method, at 20 feet apart, 108 trees are planted to the acre. The preferable distances for planting are twenty feet for dwarf varieties, twenty-four feet for Navels and Mediterranean Sweets, and thirty feet for all seedling types.

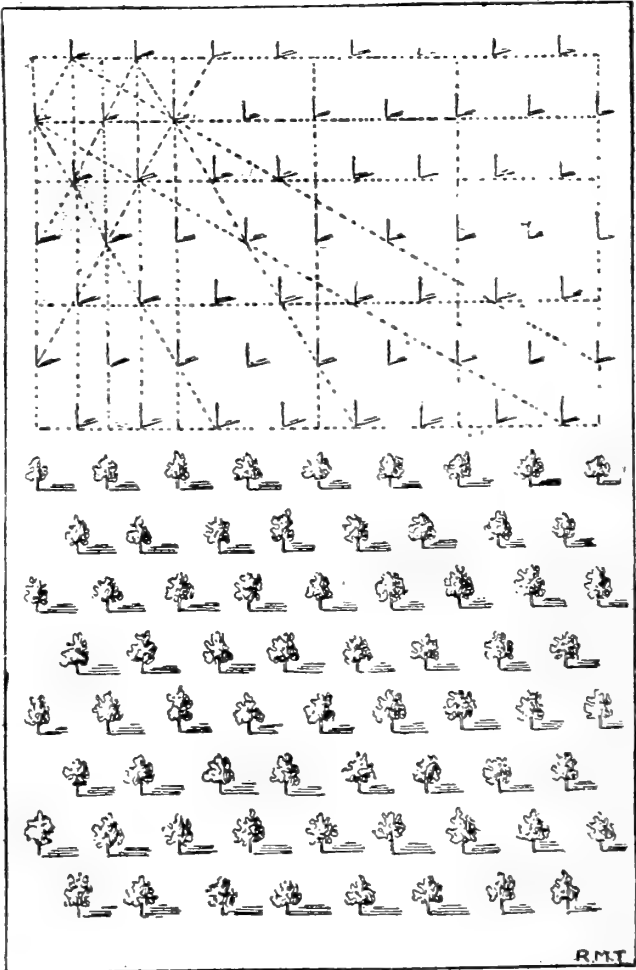
QUINCUNX SYSTEM.—In this system the orchard is laid off in the same manner as for square planting, except that the number of rows are doubled, and a tree planted in the center of every square. This method is chiefly used in planting with the idea of removing the center trees after those designed to be permanent shall have attained a considerable size; the orchard then assumes the square plan. At 20 feet apart, 199 trees are planted to an acre by this method.

HEXAGONAL, OR SEPTUPLE, SYSTEM.—In this system the trees are equilateral (equally distant from each other) and more completely fill the space than any other system can. Six trees form a hexagon and enclose a seventh. The lines in the figure indicate the method of laying out the orchard. By the hexagonal system, at 20 feet apart, 126 trees are planted to the acre.

The following table will show the number of trees to the acre by the square, quincunx, and hexagonal, or septuple, systems:

Distance apart.	Hexagonal		
	Square	or Septuple	Quincunx.
10 feet	436	500	831
12 feet	303	347	571
14 feet	222	255	415
16 feet	170	195	313
18 feet	134	154	247
20 feet	108	126	199
22 feet	90	103	173
24 feet	76	96	137
30 feet	48	56	83

Note.—In giving the distances of trees of the quincunx, the fifth or central tree is not taken into account.



THE HEXAGONAL OR SEPTUPLE SYSTEM.

TRIANGULAR, OR ALTERNATE, SYSTEM.—In laying out an orchard by this system, the lines are run forming a square, as in the square system; a line is then run diagonally across, and a tree planted alternately, forming a triangle. The advantage in this system is that the trees are given more space, and can be planted closer together without crowding.

For any distance not given in the above data calculate the number of trees to the acre by the square system, and add fifteen per cent. This will give the number if planted septuple.



COMMERCIAL SIZES OF CITRUS TREES BALLED.

The picture A shows a one-year bud, caliper $\frac{3}{8}$ to $\frac{1}{2}$ inch; B one-year bud, caliper $\frac{1}{2}$ to $\frac{5}{8}$ inch; C a one-year bud, caliper $\frac{5}{8}$ inch and all up; D a two-year bud, caliper $\frac{5}{8}$ to $\frac{3}{4}$ inch; E a two-year bud, caliper $\frac{3}{4}$ inch and all up. A, B and C are cut out with 40 pound balls; D and E (on special orders only) are cut out with 60 pound balls.

COST OF BRINGING AN ORCHARD INTO BEARING.—So much depends upon local conditions—soil, climate, water, lay of the land, whether the owner and his family are to do the work, or it is to be done with hired labor—that any estimates are quite apt to not apply in every detail. Broadly, however, the cost of preparing and grading the land and planting the trees, will average from \$15 to \$25 per acre; this includes cultivation for the first year. After that, however, cost of cultivation will increase, and be about, according to the amount of labor expended, \$15 to \$25 per acre up to the fourth year. If the orchard has been well cared for, it should pay expenses the third year from planting; by the fourth year it should produce about a box of fruit to the tree; the fifth, one and one-half to two boxes to the tree; and from that time on increase in productiveness and profit to its owner in a corresponding ratio to the care and attention expended on it.

The volume of irrigating water is also subject to some fluctuation governed by local conditions. Usually the amount would be about one inch to 10 acres for the first two seasons; one and one-half inches for the two following seasons; two inches for the fifth and sixth years; after that period an inch to every four acres will be found to be about the right quantity to use on an orchard in full bearing.

The expense of caring for an orchard obviously hinges on local contingencies. If in full bearing, allowing for the cost of water and

cost of labor in supplying same, together with the expense of cultivation, would average anywhere from \$25 to \$60 per acre. Much depends upon the owner's resources, environment, and method of carrying on the business.

A WORD OF CAUTION.—In planting an orchard, no matter whether it be citrus or deciduous fruit trees, too much care cannot be exercised in securing trees known to be true to name, of vigorous constitution, and so grown as to produce maximum crops when arriving at the bearing age. The victim of untrue-to-name citrus trees has indeed a sad experience, and suffers no end of loss and vexatious delays. In the first place, the cost of the trees and the attendant expenses are items for which no adequate damages are ever recovered; and in the second place, the loss of time—in the case of the orange and the lemon usually from two to four years—labor and expense of irrigating and culture are a severe strain on even the resources of the well-to-do; and finally, the dissappointments are quite apt to be so trying as to drive the man who plants untrue-to-name citrus trees out of the business. In no case does Davy Crockett's celebrated aphorism, "Be sure you are right, then go ahead," apply so strongly as in the selection of



ORANGE BLOSSOMS.

citrus trees true to name, when planting an orchard. Hence avoid the irresponsible dealers and growers, and buy only of old and well-established institutions. The truth of the above has on more than one occasion been verified in the development of orchards in California, notably during the earlier history of citrus culture when many inferior trees were grown and also imported.

Varieties of Citrus Fruits to Plant for Best Results.

THE ORANGE.

WASHINGTON NAVEL.—This is the most valuable orange known. Tree of moderate growth with small thorns. Full, well-rounded top; dark glossy foliage. Blooms heavy and in California is one of the best and most regular bearers. Bears young, generally in the third year from



WASHINGTON NAVEL ORANGE.

planting, and sometimes in the second. Fruit large to very large; skin generally smooth and thick, of full orange color, and peculiarly marked at bloom end, where a small irregular secondary



VALENCIA LATE ORANGE.

orange is formed, imbedded within, sometimes protruding from the segments of the fruit. The orange is seedless, flesh crisp and sweet, and flavored with some bewitching secret of its own—no other taste to describe it by. Season early. A No. 1 shipper.

THOMSON'S IMPROVED NAVEL.—In character and habit closely allied to the Washington Navel. Fruit of medium size, smooth and thin-skinned, good flavor, and comes into bearing early. Those desiring a thin-skinned, early Navel for the holiday trade will not go wrong in selecting this fruit. By this is not meant that its season is limited to the holidays, quite to the contrary, its keeping qualities are equal to those of the Washington Navel. Its splendid appearance, fine texture of peel, superb color and eating qualities render it an especial favorite among consumers during the Christmas and New Years festivities, when it invariably commands the market at good prices.



THE PROLIFIC VALENCIA LATE ORANGE.

VALENCIA LATE.—Tree of very fine and vigorous growth; light thorns. Early in bearing and prolific. Fruit of medium size, oval, solid, heavy. Light color. Skin rather thin and of strong texture. Flesh of deep and very rich color, grain fine, firm and crisp; abundant juice; excellent flavor, the quality that suits the hot months. Season latest, being prime after other

varieties become stale, and maintaining fine quality through summer and autumn. Of best shipping quality and reaches the market when there are no other oranges to compete.



THOMSON'S IMPROVED NAVEL.

RUBY BLOOD.—Medium size, nearly round; skin thin but very tough; pulp melting, rich, juicy. As the fruit ripens it usually becomes streaked or mottled with blood red, often the



RUBY BLOOD ORANGE.

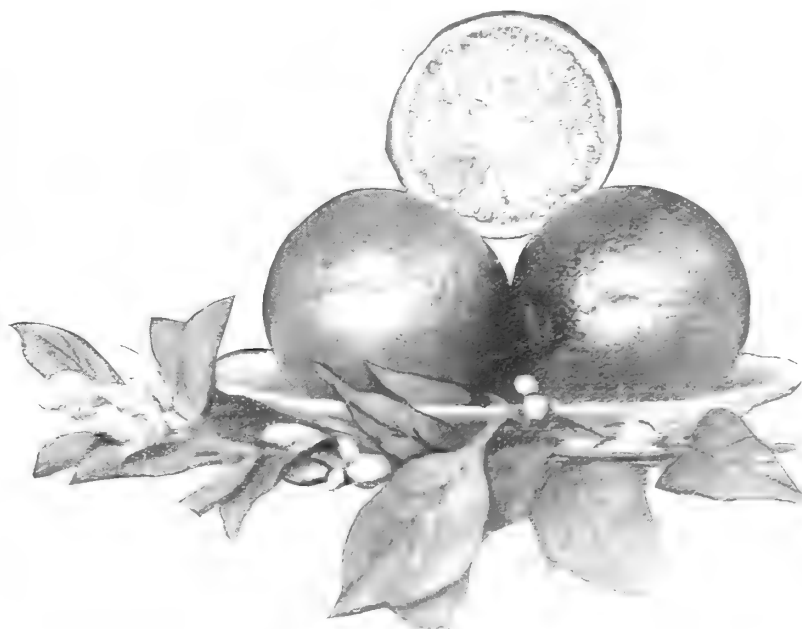
entire pulp gets ruby red, showing through the peel in a reddish blush on the outside. One of the best blood oranges. The tree is vigorous, nearly thornless, and a regular bearer.

MEDITERRANEAN SWEET.—Thornless, low, spreading tree; very productive. Fruit oval, medium to large; rich orange color; inclining to thick skin. Season middle to late. Shipping quality of the best.



MEDITERRANEAN SWEET ORANGE.

PAPER RIND ST. MICHEAL.—Tree vigorous and of excellent habit; light thorns; heavy bearer. Fruit small, round, very solid and heavy. Skin thin, smooth and of a very fine texture; color pale, almost lemon; membranes thin; grain fine; most abundant juice; sprightly, excellent flavor. A general favorite. Season middle. Shipping quality best.



FOLIAGE, BLOOM AND FRUIT OF THE RUBY BLOOD.



PAPER RIND ST. MICHAEL.

MALTA BLOOD.—Ripens just as the Navel is getting late. Tree of slow but persistent, upright growth, and disposed to bear in clusters on terminals; a heavy bearer; fruit oval, seedless, with peculiar refreshing and acid flavor; pulp usually splashed with crimson streaks, sometimes almost solid crimson, though when grown in shade it is often slightly colored.

SWEET SEVILLE.—Medium to small; a good keeper and shipper. Tree vigorous and prolific. Ripens very early.

GOLDEN VARIEGATED.—An ornamental sort with beautifully variegated foliage. A novelty in citrus culture.

BOQUET DES FLEURS.—An ornamental variety of French origin, possessing a very thick and leathery foliage, of a light green color. The Burgamot oil of commerce is a product of this variety.



THE NAGAMI KUMQUAT ORANGE.

KUMQUAT OR KIN-KAN.—This unique and curious member of the citrus family, commonly called Kumquat in this country, is a native of Japan, where it is known as Kin-Kan, which means gold orange. Kumquat is Chinese for the same meaning. It bears in great profusion a small and very handsome, deep yellow fruit. There are two kinds, alike in tree and differing only in size and shape of the fruit. The Marumi bears a round fruit, from three-quarters of an inch to an inch in diameter; the Nagami, an oblong fruit somewhat larger. The latter is the kind commonly seen in this country, is rather more desirable on account of the large size of its fruits, and is the one we offer. The whole fruit, rind and all, is eaten, and people become very fond of them. The sweet rind and the agreeable acid pulp makes a piquent combination relished by most palates. Preserved in sugar or crystalized the Kumquat, wherever it is known, is deservedly popular.

DANCY'S TANGERINE.—Unlike most of its family this bears the broad leaf, much like the common orange. Ripens with the Navels; deep reddish color; skin free from flesh, and segments

cleaving free, as in other "kid-glove" oranges. Meets a special and limited demand—often at the very highest prices. The tree makes a beautiful appearance, with its small, intensely-colored fruits. The standard variety of its class.



A FRUITING SPRAY OF DANCY TANGERINES.

WILLOW-LEAVED MANDARIN.—A delicious, handsome and favorite sort, of medium size, flattened; deep yellow; skin thin; segments loosely adherent; flesh dark orange-yellow, spicy



WILLOW-LEAVED MANDARIN.

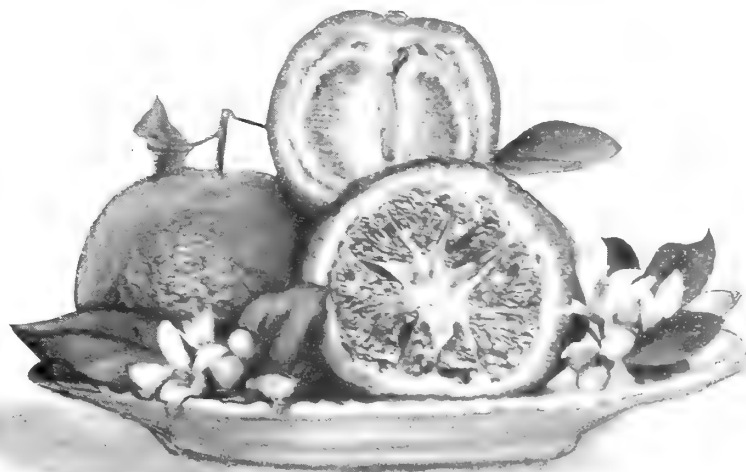
and aromatic. Highly esteemed for eating out of hand because peel separates readily from the pulp; rated as one of the best of the kid glove type. Tree a very compact grower, forming a beautiful umbrageous head, hence exceedingly desirable as an ornamental feature of the orchard or garden.

KING.—Very large, flattened, and with loosely adhering rind and segments, like all the Mandarin varieties; color orange-red; skin rough, but general appearance fine; juicy, meaty; its high and peculiar aromatic flavor is very agreeable. Quality the very best. Tree upright, strong grower, foliage dark and rich. June to August; keeps in good condition even later.



THE KING MANDARIN ORANGE.

SATSUMA (*Oonshiu*, *Kii Seedless*).—Medium, flattened; the color is not red, like the King and Tangerine, but a deeper yellow



THE OONSHIU OR SATSUMA.

than the Mandarin; rind and segments part freely; flesh fine-grained, tender, juicy, sweet and delicious; entirely seedless; one of the earliest sorts known; fruit ripens as early as November. Tree thornless and bears young.

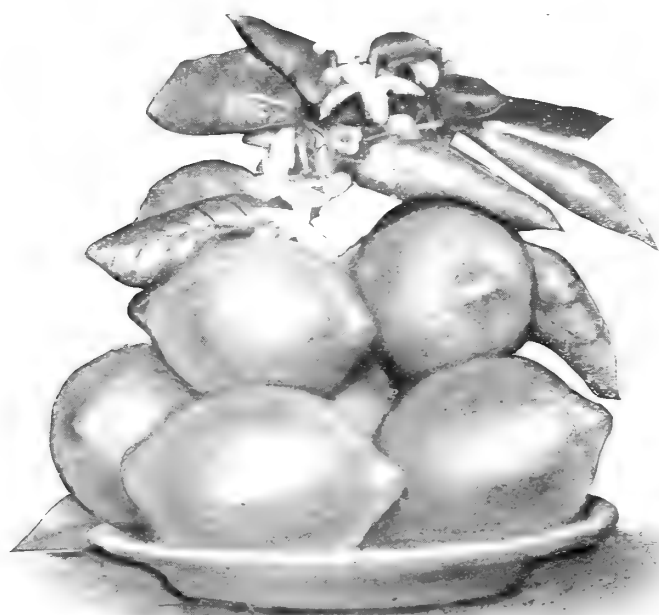
THE LEMON.

EUREKA.—The recognized commercial variety in California, commanding a wider market than any other sort. Tree of vigorous growth, practically thornless, a prolific grower and heavy bearer. Fruit medium size, sweet rind, fine flavor, abundant

acid, little rag. Cures and keeps well. A truly Southern California variety, originating from seed imported from Hamburg in 1872, from which trees have been propagated by budding.



THE EUREKA LEMON: THE CALIFORNIA FAVORITE.



THE LISBON LEMON.

Deservedly popular and commands first place in the trade for its fine shipping and fruiting qualities.

VILLA FRANCA.—A fine variety and desirable for commercial planting. Fruit of medium size, good substance, fine flavor, rind thin, no trace of bitterness, free acid with little pulp, fruit nearly seedless. Tree thornless, branches spreading, foliage abundant; a strong upright grower setting its fruit well in the foliage.



PROLIFIC FRUITING OF THE VILLA FRANCA LEMON.

LISBON.—Tree of largest growth; thorny. Size of fruit medium. Sets well in the limbs. Fruit oblong with prominent point; color bright; rind of medium thickness and of soft, excellent texture, giving with the strong membranes high keeping and shipping qualities. Abundant juice; acid very strong and flavor fine; very few seeds. Imported from Portugal, and rated as a standard variety.



A FRUITING SPRAY OF THE EUREKA LEMON.

THE LIME.

LIMES (*Mexican*).—The lime should be more extensively planted. It makes an excellent hedge, or the plants can be grown in orchard form. The lime juice of commerce is the product of this fruit. The Mexican is a variety extensively grown in Old Mexico.

THE TAHITA.—A good sort, yielding a fruit nearly the size of the lemon; practically seedless with abundant acid of fine flavor; never more susceptible to frost than the Mexican.

THE POMELO OR GRAPE FRUIT.



IMPERIAL POMELO.

IMPERIAL.—Fruit medium to large, peel very smooth and medium thin and of fine texture; little rag; juice abundant and of fine aromatic flavor; one of the best keepers and shippers; tree a strong upright grower and heavy cropper.



MARSH SEEDLESS POMELO.



FRUIT AND FOLIAGE MARSH'S SEEDLESS POMELO.

MARSH'S SEEDLESS.—Medium size (will pack 54 to 62 to box.) Thin rind, with about half the usual bitter. It is a true grape fruit and not a hybrid, with all the characteristics of the common varieties, with the exception of being almost absolutely seedless. Sometimes you will find a fruit containing three or four shells of seeds, but as a rule it has none at all. With the absence of seeds, the amount of juice increases, the flavor improves and the fruit retains its noted qualities, and the pulp or meat is dark and rich. In serving this fruit you are not required to remove from 25 to 40 seeds, as is necessary with our common grape fruit, but is ready for the table when cut in halves. The fruit is known to be a late keeper. The fact of its not having seed

that germinate when left late on the trees or in storage, increases its keeping qualities to a great extent and is another factor greatly in its favor. A three-year-old bud will bear all the fruit it should hold at that age.

TRIUMPH.—Medium; peel smooth, clear, thin and fine grained; less "rag" than in most grape fruits, and fewer seeds; very heavy; juicy and well flavored. There is no bitter in the juice, flesh or membranes surrounding the cells and dividing the segments,



FOLIAGE AND FRUIT TRIUMPH POMELO.

and very little in the white inner lining of the peel. Tree bears young and is prolific. One of the best of the improved varieties.

KEEPING QUALITIES.—It should be borne in mind that Pomelos possess curing and keeping qualities equal to the lemon, thus lengthening the shipping and marketing season of this fruit.

THE CITRON.



CROSS SECTION.



THE FRUIT.

CITRUS MEDICA CEDRA.

CITRUS MEDICA CEDRA (*The Citron*).—This is the true citron of commerce, from which an essential oil is obtained. According to Von Mueller, an essential oil and citric acid can be obtained from the fruit in addition to its culinary uses. The fruit is oblong, and of conical shape; skin thick, warty and furrowed in some varieties, while smooth in others, color lemon yellow and highly scented; pulp less acid than the lemon; tree of low spreading habit, and quite susceptible to frost; blossoms and fruits at all seasons of the year, and bears heavy crops early. The amount of citron rind sold in the United States amounts to 12,000 cases of 250 pounds each, every ounce of which is imported. The tree grows well in California wherever the lemon luxuriates.



New and Desirable Varieties of the Orange.

THE first two varieties of the ever-popular Navel orange mentioned below are the product of our propagating ground and the result of careful selection and training. We are convinced they possess some advantages over other Navel oranges, hence beg to announce that we have trees to

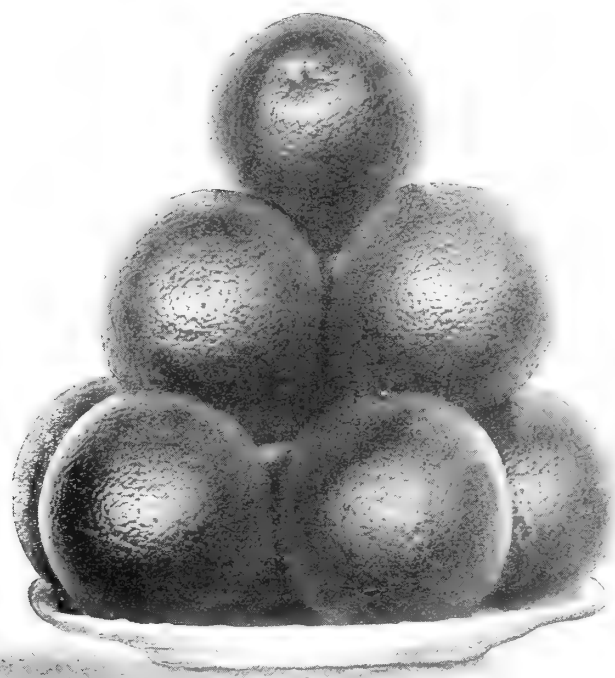


THE GOLDEN NUGGET NAVEL ORANGE.

THE GOLDEN NUGGET NAVEL.—This is a new variety which we have been experimenting with in our propagating grounds for some time past, and which we fully believe will prove an agreeable surprise to planters as well as shippers. Indeed, so confident are we of its future, that we are now offering the trees in commercial quantities. The parent tree, which has fruited sufficiently to test the fruit as to quality, shows a development much like the Washington Navel, being a vigorous grower, of good habit, and thornless. In appearance the tree possesses features peculiarly its own, by reason of its exceptionally dark green foliage, abundant lateral or fruiting branches, and fine symmetrical appearance, making it distinguishable at sight in a grove with other varieties. The foliage is more lanceolate than that of the Washington Navel, and in color a shade darker, not quite so broad nor apparently quite so thick or leathery. The wood growth, particularly the younger branches, are more slender and willowy, which makes the tree rather umbrageous. The fruit is very smooth, solid and thin-skinned, very much more so than the Washington Navel, even at its best; of fine texture, the exterior strongly suggestive of kid gloves to the touch, smooth and even surface; color a strong gold; shape rather oblong, good size; fruit exceptionally free from rag and is seedless; flavor delicious, bears young, generally second year from planting; a good shipper and keeper; its late ripening period makes it exceptionally valuable as a late navel, when all other navels are off the market; packs about 90 per cent fancy fruit, rendering it in every way a valuable addition to our varieties.

offer for this planting season. We fully believe the Golden Nugget and the Golden Buckeye Navels are destined to be the greatest additions to citrus culture in Southern California since the advent of the Washington Navel in the early 70's. The Navelencia mentioned last is also commanding attention, and is really worthy of consideration on the part of intending planters.

THE GOLDEN BUCKEYE NAVEL.—A candidate for horticultural honors that is sure to be heard from. The tree is a good grower, thornless, leaves lanceolate, much more so than the general run of orange trees, and only slightly serrated; dark green in color; new wood inclined to grow slender but of good strength; general habit and appearance of tree strikingly individual; a pronounced characteristic of the fruit, which makes it distinct from

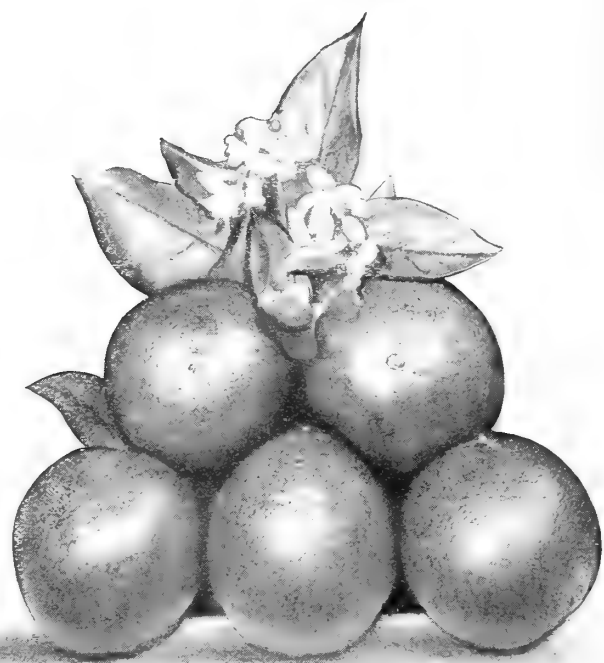


THE GOLDEN BUCKEYE NAVEL ORANGE.

all other varieties of Navels, is a series of bands or ridges of a deeper orange color, which adds much to the beauty and renders it more than any other variety, peculiar to itself; smooth and of a kid-glove texture; flavor strongly aromatic, with a suggestion of pineapple to the taste; pulp of fine texture with but few segments, thus affording a melting and soothing sensation to the palate; almost entirely free from rag; packs 90 per cent fancy; is a good keeper and shipper; while its exceptional earliness gives it a commercial value of first importance.

CAUTION.—It has come to us that unprincipled growers are disposing of citrus trees as coming from and being grown by the San Dimas Citrus Nurseries. To avoid deception in this regard and to protect our patrons' interests, we label every kind and sort of citrus tree with our individual label,—fac similes of right and reverse sides appear elsewhere. All trees coming from our establishment bear this label as a guarantee of their genuineness. See that your purchases contain it; otherwise your trees are not the product of this establishment.

R. M. TEAGUE.



THE NAVELENCIA ORANGE.

THE NAVELENCIA.—A new variety that is commanding some attention from growers. It is said by the originator to be a cross between the Thomson's Improved Navel and the Valencia Late, for it is claimed the good qualities of the former, together with a lateness in ripening which makes its season from 30 to 60 days later than the Washington Navel, thus affording a market of its own between the marketing of the Washington Navel and the Valencia Late. Tree of good growth, small thorns, full well-rounded top, dark glossy foliage, in character and habit closely allied to other Navels; fruit of good size, smooth and thin-skinned, and comes into bearing second year from the bud.

OUR EXPORT TRADE.—Planters in Mexico, Central and South America, the Philippines, Cuba, and other citrus fruit countries should bear in mind that we make a specialty of exporting orange and lemon trees; also that we are in a position to make it to their interests to place orders with us. Our export trade is indeed a growing one, orders of considerable magnitude having been received from Mexico, South America, the Philippines, Australia, South Africa, Porto Rica and Cuba.



WASHINGTON NAVELS, FOUR YEARS FROM PLANTING.

VALENCIA LATES IN FULL BEARING.

The Citrus Tree an Object of Beauty.



AN OBJECT OF INTEREST: A CITRUS TREE BUDDED TO 22 DIFFERENT VARIETIES.

Embracing Navels, Valencias, Seedlings, Tangerines, Pomelos, Lemons, Etc.

IT will be noticed that in the foregoing descriptions no cognizance has been given to the value of Citrus trees for ornamental planting in the garden or on the lawn, nor the decorative values of the kid glove sorts as objects of beauty in hall and corridor, piazza and conservatory. To meet this demand, we grow a small number of extra choice trees in pots and tubs each season to which the attention of plant and tree lovers with only a limited area of land to devote to horticultural purposes is called. These, for the most part, cover all the standard sorts, though in addition to these we also grow a limited number of trees budded from two to six varieties of oranges and lemons to the single tree. Plants so treated possess an attraction beyond the usual, being within themselves a composite product of the striking characteristics of the different habits and characteristics of fruit and tree covering the number of varieties

so budded to a single root or stock. These we especially recommend to planters of small home grounds where space will admit of only one or two citrus trees.

For city and suburban home grounds these specially grown and budded trees possess an economic and ornamental value which entitles them to first consideration. No evergreen tree possesses a grace and beauty beyond that of our well-grown orange and lemon trees. When to this is added the fruit product of citrus trees, it is obvious that no home garden or orchard can be considered complete without a representation.

If people contemplating planting their home places will kindly write us the area of ground to be given to citrus trees, we shall be pleased to give suggestions as to varieties, numbers, etc., in order to produce a pleasing effect and at the same time seasonable fruiting varieties.

Citrus Trees must have Liquid Refreshment.



ZIG-ZAG SYSTEM OF IRRIGATION.



BASIN SYSTEM OF IRRIGATION.

THERE are three methods of irrigation in Southern California, viz., the furrow, the basin and the zig-zag systems. Our illustrations give a clear idea of the practical working phases of each. As the name implies, the furrow system consists of several furrows plowed between the rows of trees, and down these the water is allowed to flow gradually until the ground is thoroughly saturated. In furrow irrigation the water should be allowed to run very slowly in order to percolate through the soil to a considerable depth and at the same time prevent its washing down and leaching out the ground.

The basin system consists in each tree being basined, an operation usually performed by a plow or what is known as a blocker or ridger, which consists of a V-shaped implement made of wood and iron or iron alone. This throws up a ridge or embankment of earth around each tree, which is allowed to fill with water from the main furrow, once or twice. In this way the whole grove is treated, each basin being filled independently from the main furrow between the rows of trees which tap your main supply ditch.

The zig-zag system is an improvement on the basin system, and



FURROW SYSTEM OF IRRIGATION.



IRRIGATING A HILLSIDE ORCHARD BY CONTOUR FURROWING.

consists in the orchard being first cross-furrowed, then ridged lengthwise, as indicated in illustration (shown on page 34). Its chief advantages consist in obviating a baking of the soil by not covering the entire surface of the ground with water, thus affording sufficient dry earth to make a mulch when cultivated over the entire irrigated surface (an operation which can be done sooner after irrigation than in the basin system.) This leaves the soil friable and at the same time conserves the moisture in the ground, which obviously is a great advantage over the basin system.

Irrigation on rolling or hilly ground is of itself quite an art, and is practiced by running furrows on the contour so as to guide

the water without overflowing and thus flooding the soil. The artificial application of water to side hill orchards is only feasible by the furrow system in the manner indicated in the illustration.

It is an axiom among fruit growers in Southern California to first find your water and then look for a good piece of land on which to put it. This illustrates the importance of a reliable supply of water for irrigation purposes when planting and cultivating an orange grove. Indeed, in the climate of California, portions of Old Mexico and far-off Australia and South Africa, citrus culture is only feasible where there is an available water supply with which to carry the trees over the dry season.



A THOMSON NAVEL GROVE.

A EUREKA LEMON GROVE.

For the Land's Sake Feed the Trees.

EXPERIENCED growers know that orange and lemon trees are gross feeders, and hence respond quickly to an application of plant food to the soil. In California, and for that matter in the arid regions quite generally, the soil is naturally rich, and when the tree is planted on virgin ground, it will do well without any application of fertilizer for the first few years; after that, however, some recognition must be given

The experience of orange growers indicates that the quality and quantity of the fruit may be very largely controlled by fertilization, and as oranges are purchased entirely upon their appearance and quality, this becomes a very important consideration throughout this region. Fertilization should be carried on with but one object viz., to enhance quality and quantity of fruit.

Touching kinds of fertilizers and values of stable manure, a



CITRUS ORCHARD PLANTED TO FIELD PEAS TO BE PLOUGHED UNDER AS GREEN FERTILIZER.

the orchard in this regard. Its extent and character is obviously a matter of local conditions, to which the intelligent grower will give careful attention, and act in compliance with the best practice of the successful and experienced growers in his locality. In sections where the soil is shallow it is expedient to apply a fertilizer every year from the time the orchard is planted. In the rich soils of California, it has been found that nearly all the subsidiary elements of plant food are present, and hence only the four leading elements must be supplied, viz., nitrogen, phosphoric acid and potash, and in rare cases lime. These must be replaced in the soil of orchards subject to constant cropping. The intelligent grower, therefore, will be quite apt to see to it that his trees do not suffer for the want of nitrogen, phosphoric acid and potash, because these are the elements which the crop annually draws from the ground, and which must be replaced.

report to the Riverside Horticultural Club on this subject contains the following suggestive paragraph:

"The question of fertilizers for the orange orchard has in some form been almost continuously before the club. What kind of fertilizers are the best, and how and when they should be put on? are questions often asked, but never as yet answered to the satisfaction of all. It is known that the different commercial fertilizers on the market are good, and when freely applied they generally give satisfactory results. But growers believe that they are too expensive, and that by buying the chemicals and doing their own mixing, or by applying the chemicals in suitable quantity to the soil without mixing, they may reduce the expense about one-half. There is a growing conviction among orchardists that stable manure is one of the most valuable fertilizers, when it can be secured at reasonable figures. One small Navel orchard in Riverside, fifteen years old, a part of which has been fertilized exclusively with stable manure, has borne regularly, and the fruit has been fully up to the average standard of quality."

The Atmosphere of the Market Place.

FOR the sake of an argument we will now assume that you have been eminently successful in establishing an ideal orange or lemon orchard; that your trees meet your anticipations as to beauty of form and bearing qualities and prove to be true to name; that your soil has demonstrated its adaptability to the growing of citrus fruits; that

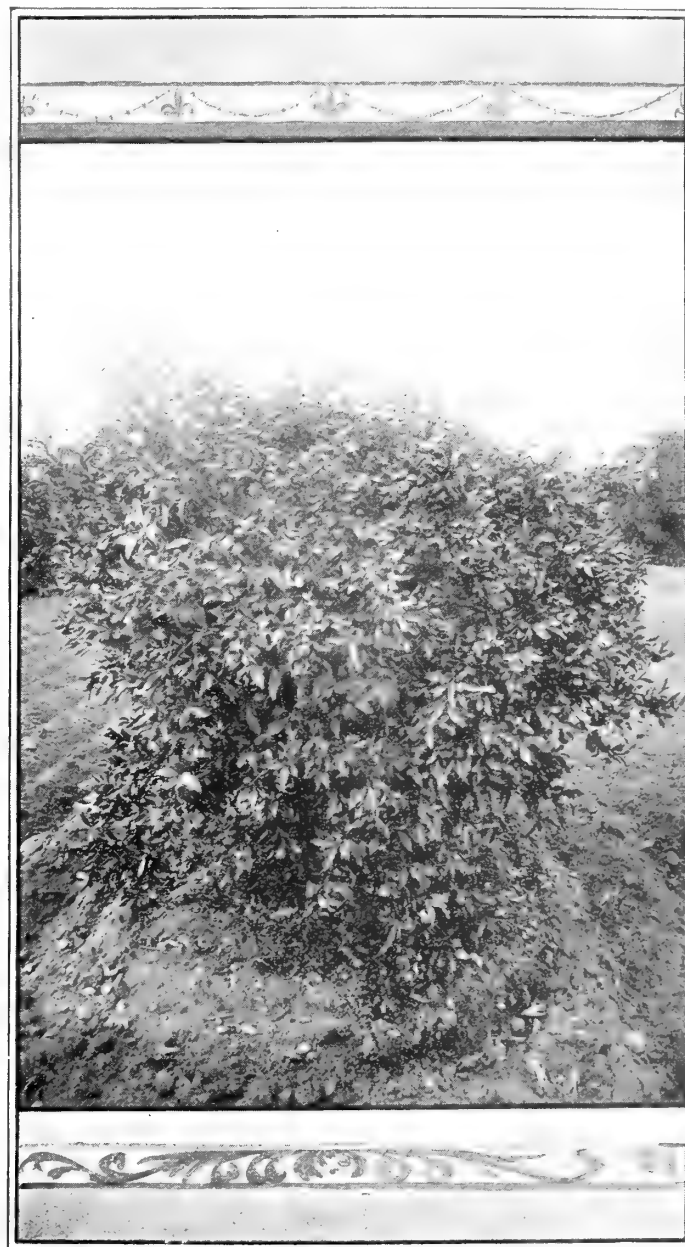
and quality. It is in just the right condition for marketing and shipping, and hence it is of importance that we so handle it that it shall reach the consumer with all its natural beauty of form and flavor unimpaired. To accomplish this, certain operations are essential, which may be described and should in the main be carefully observed.



CALIFORNIA PICKING SACK.

your methods of cultivation and irrigating have "made good" and that the luxuriant green of the foliage coupled with the fine quality of your fruit has verified the intelligence you have exercised in supplying the proper elements of plant food. What next? Only this: you have still to prove the quality of your citrus fruit pudding by its eating. In other words you have to prove that you can properly harvest and market the fruit in order to realize that "There is money in growing oranges and lemons."

These premises being conceded, let us picture to ourselves a splendid grove of something like forty acres in full bearing. The fruit is superb in quality and gratifying to our sense of fullness

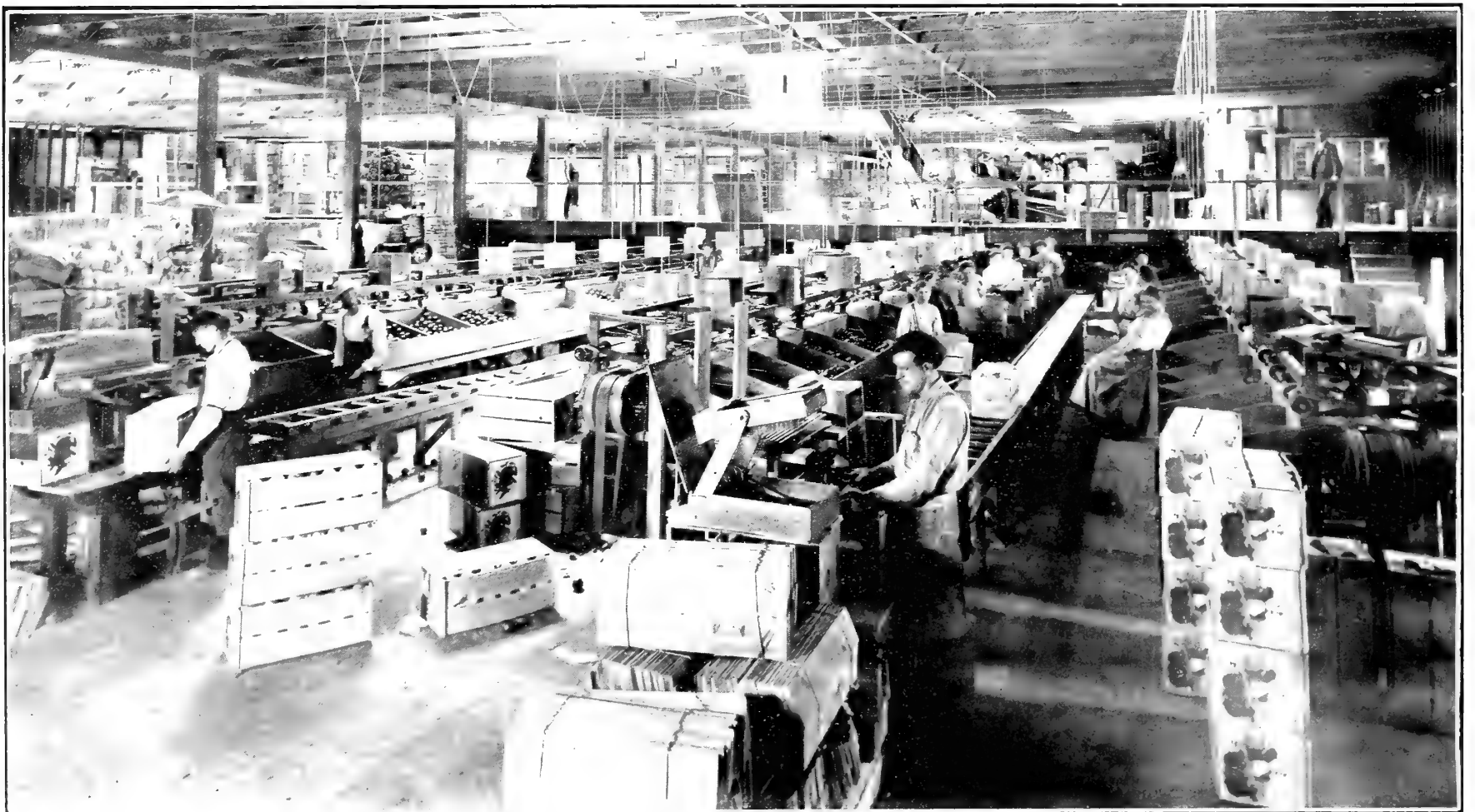


THE EVER BEAUTIFUL KUMQUAT.

The necessary number of hands to accomplish the task are on the ground; the matter of conveyances to the packing houses provided, and the paraphernalia for expediting the work supplied. Each one of the pickers is supplied with a modern picking sack with a false bottom capable of holding something like fifty oranges and one hundred lemons—everything depending on the size of the individual fruits—a pair of orange clippers, and a ladder, the latter depending for its size upon the spread and height of the tree from which the fruit is to be gathered. In harvesting a crop care must be taken to cut the stem with the clipper close to the fruit, taking each fruit in one hand while performing the action.



THE HUM OF INDUSTRY PACKING A CALIFORNIA CROP OF CITRUS FRUITS.



CITRUS FRUITS FOR THE NATION: HOW THE 30,000 CARLOADS ARE TREATED IN THE PACKING HOUSES.

clipping with the other. When cut, the orange should be carefully placed in the picking sack with as little handling and jostling as possible. When the picker has filled his sack he then empties it carefully into the picking boxes previously provided in close proximity to his location in the orchard. This

weighers, which dump it when the requisite weight is attained, then it passes into a contrivance known as a grader or sizer, which designates in its operation the several sizes that go to make up a box of fruit. While passing over the grader or sizer, hand graders are stationed at regular intervals who remove the "stand-



A STANDARD LEMON PACK.



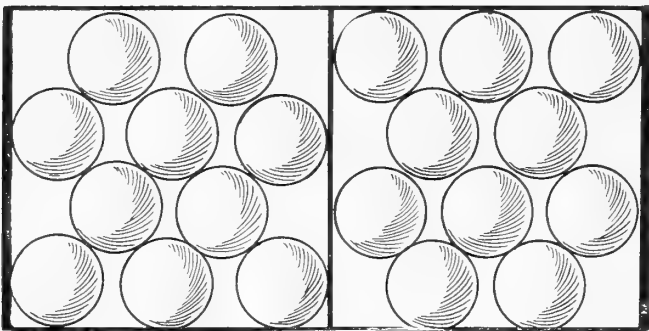
A PACKED BOX OF ORANGES.

also should be carefully done, by placing the sack with its contents gently into the box, then unhook the bottom, when it should be gently pulled away from its contents, allowing the fruit to roll out easily into the box, but not filling it so close to the top as to run the risk of bruising in piling one box over the other. This operation is repeated until the requisite number of boxes are filled constituting a wagon load, when the fruit is hauled to the packing house. In the case of the lemon, the picker grades the fruit suitable for cropping and curing according to size, which is determined by means of a ring carried in the hand, denoting the diameter of the fruit desired.

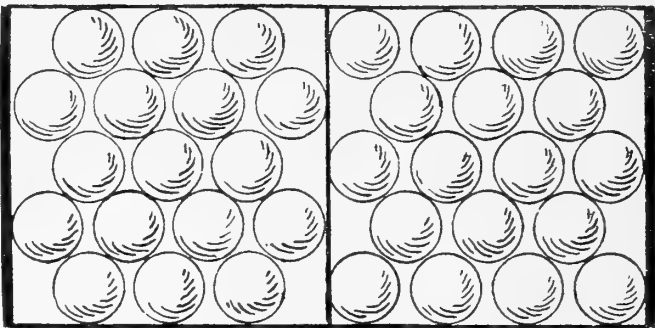
This practically constitutes the operations in the orchard, from which the fruit is conveyed to the packing house in wagons provided with springs calculated to obviate jolts and consequent bruising and damage to the fruit. Arriving at the packing house the fruit is first submitted to a thorough cleaning by passing through a series of revolving brushes which remove all deleterious substances and dirt which is in turn cleared away by automatic blowers and finally removed to the outside of the building by suction; from here the fruit goes directly into automatic

ard," "off" and "cull" grades, placing them into boxes according to their classification. In oranges the regular sizes are 126, 150, 176, 200, 216; small offs 250, 324, 360; large offs 64, 80, 96, 112. Each number designates the actual quantity of individual fruit to the box. As the different grades are carried over this belt the smaller fruit reaches the sizer first and is carried to its bin, the second second, and so on until the largest specimens are delivered at the last bin in the line. This operation, in a large establishment, is continuous during the shipping season covering a working day. At each bin there is stationed a packer, whose business it is to wrap each fruit in an independent tissue wrapper, placing the same carefully into the box in which the fruit reaches the consumer. To save time and expedite the work, others take the filled box from the hands of the packer at the bins and convey them to the box press where they are automatically pressed down and held in place while the operator securely nails down the top and stamps the number and grade of oranges in each box on the label end. From here the packed boxes are stacked one upon another on their sides to the required height ready for trucking into the car. Usually the labels design-

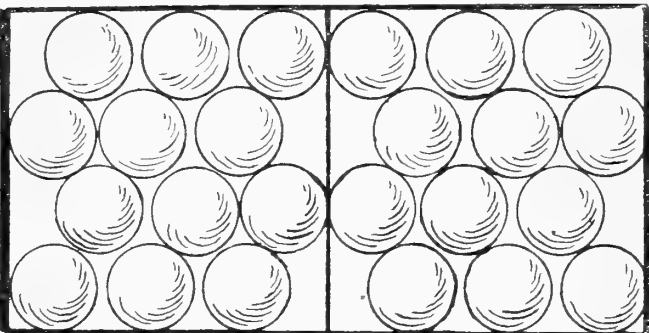
Standard Packs for Oranges and Lemons used by the Trade in California.
ORANGES.



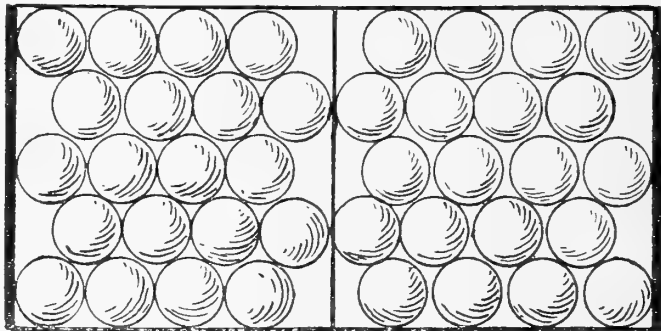
STANDARD 80-PACK. FOUR LAYERS.
(FOR 48-PACK SEE POMELO.)



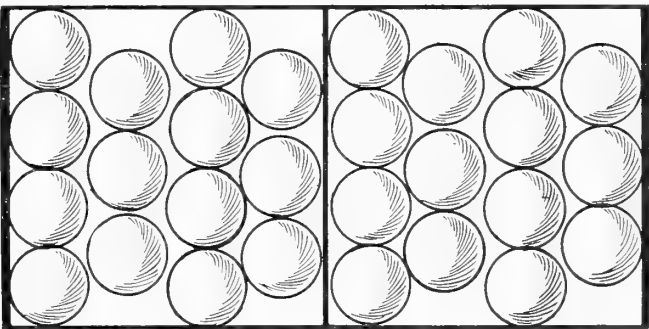
STANDARD 176-PACK FIVE LAYERS.



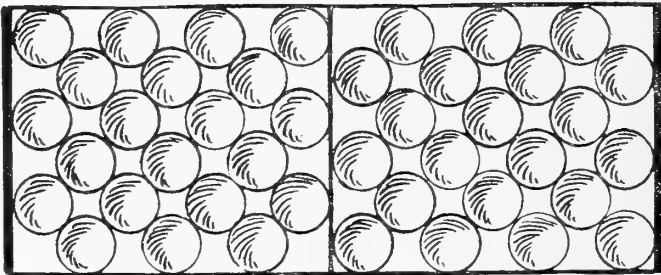
STANDARD 96-PACK. FOUR LAYERS.



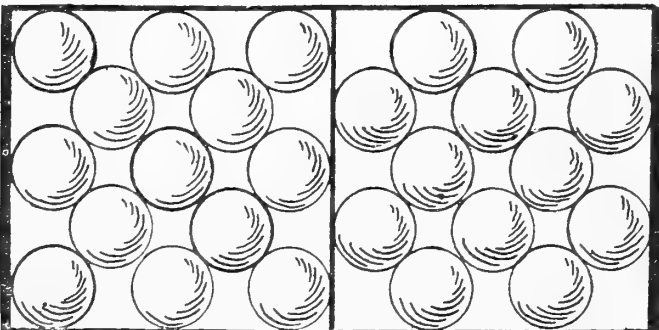
STANDARD 200-PACK. FIVE LAYERS.



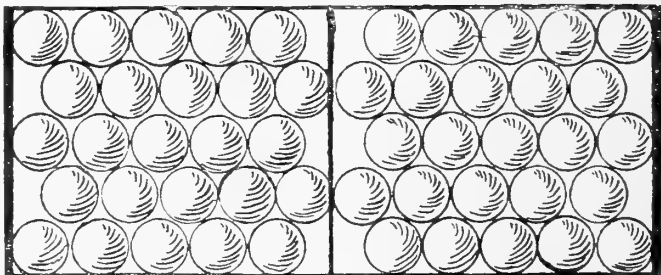
STANDARD 112-PACK. FOUR LAYERS.



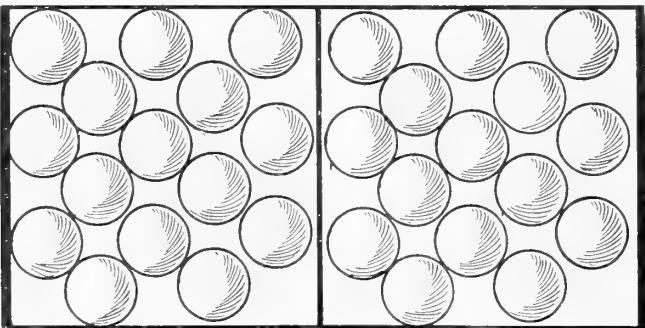
STANDARD 216-PACK. SIX LAYERS.



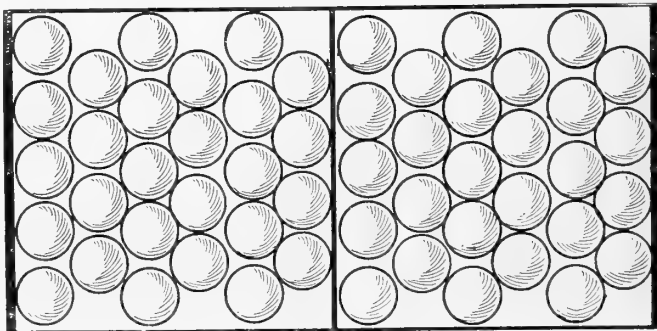
STANDARD 126-PACK. FIVE LAYERS.



STANDARD 250-PACK. SIX LAYERS.

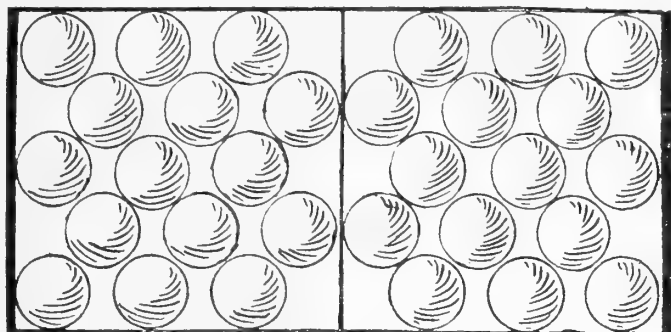


STANDARD 150-PACK FIVE LAYERS.



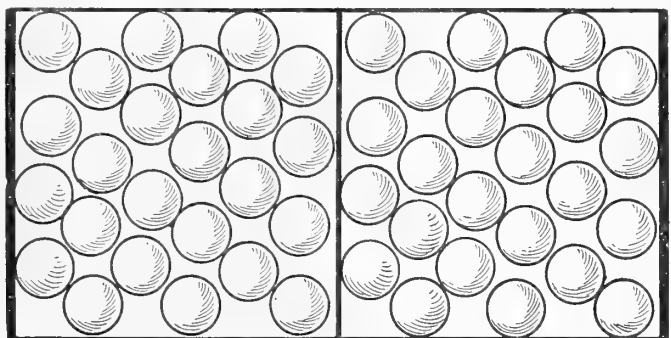
STANDARD 324-PACK. SIX LAYERS.

LEMONS.



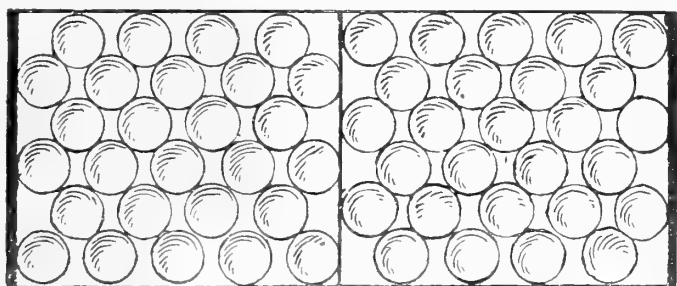
STANDARD 210-PACK.

SEVEN LAYERS.



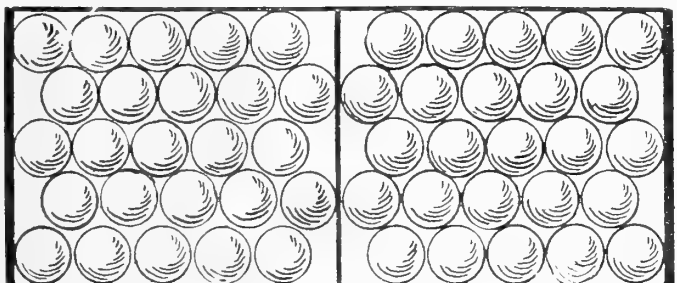
STANDARD 240-PACK.

FIVE LAYERS.



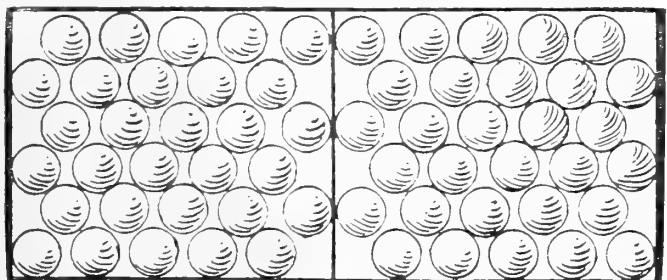
STANDARD 270-PACK.

FIVE LAYERS.



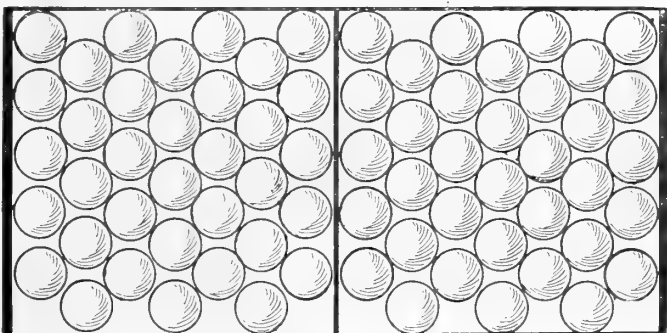
STANDARD 300-PACK.

SIX LAYERS.



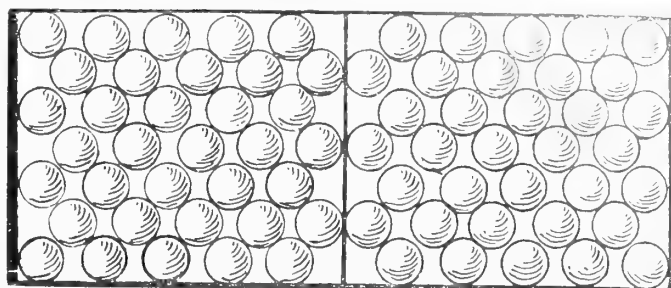
STANDARD 360-PACK.

SIX LAYERS.



STANDARD 420-PACK.

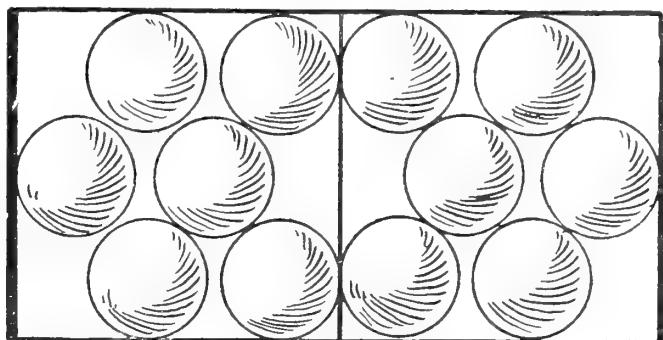
SIX LAYERS.



STANDARD 490-PACK.

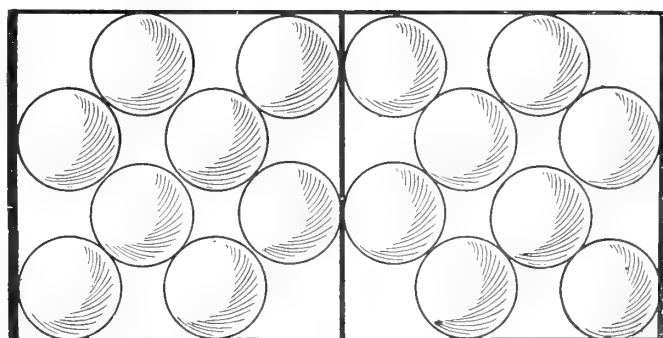
SEVEN LAYERS.

POMELO.



STANDARD 36-PACK.

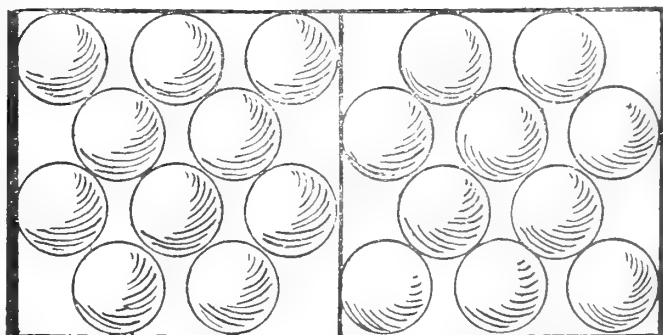
THREE LAYERS.



STANDARD 48-PACK.

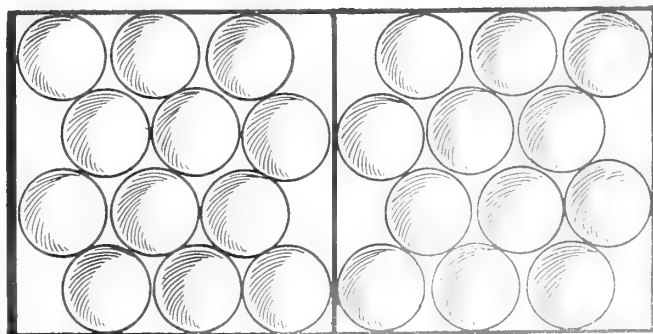
THREE LAYERS.

(SAME FOR LARGE OFFS, 48-PACK ORANGES.)



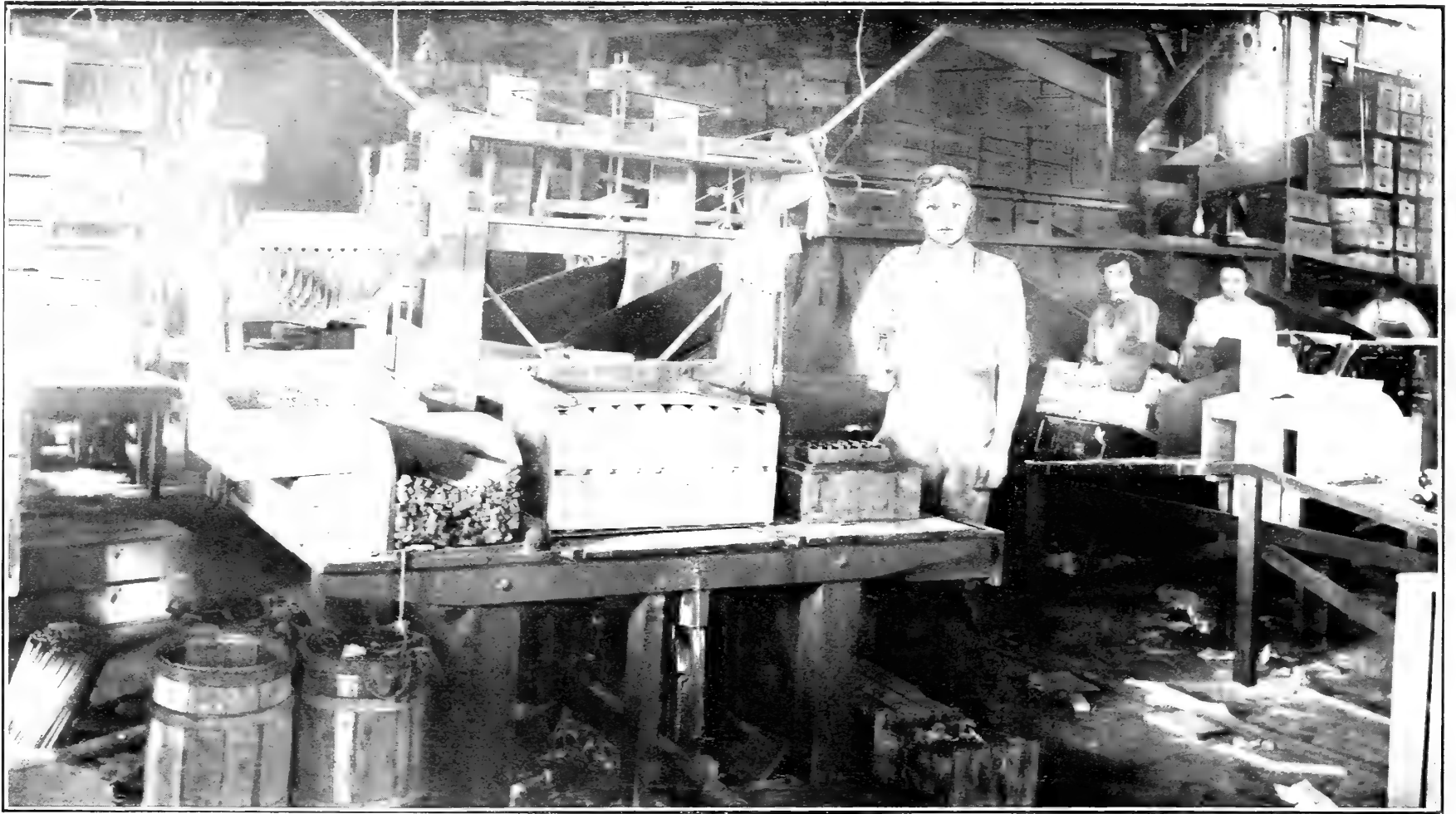
STANDARD 80 PACK.

FOUR LAYERS.



STANDARD 96-PACK.

FOUR LAYERS.



INTERIOR SCENES IN CALIFORNIA CITRUS FRUIT PACKING HOUSES.



HAND GRADING AND PACKING LEMONS.

nating the grade are placed on the empty boxes; this, however, is not imperative. A carload of packed oranges varies some in number of boxes in keeping with the size of car. A 36-foot car will take 336 boxes, a 40-foot car 384, and a 42-foot car 409—the latter is a late introduction, which it is hoped will become popular in the near future. In lemons, the 36-foot car will take 288 boxes, the 40-foot 312 and the 42-foot 336. When packed the boxes are placed on end with a space for ventilation

It has been said that the apparel oft proclaims the man and it is also true that the package often sells the goods. Be sure your pack is uniform and true to grade, mark your package or box true to name, quality, number and size; pack boxes full, solid and uniform—fruit at top, bottom and center all alike. Establish a reputation for honesty and neatness, and invite buyers by making your product attractive. Give value for value, and you can rest assured, success will be yours.



A SPLENDID NAVEL ORANGE GROVE AT SAN DIMAS, CAL.

between each and every box, made feasible by nailing small strips of lumber of sufficient strength crosswise of the 'car. This done, the car is ready to be sealed and sent to its destination. Every establishment has its own individual car banner indicating where the fruit was grown and packed.

In the main, much the same procedure is observed in packing lemons, the differences being substantially as follows: with lemons the fruit is graded exclusively by hand at the time of shipment. Curing is in many cases optional, much depending on the condition of the market.

Too much caution cannot be observed in handling citrus fruit from the moment it is clipped from the tree until sealed up in a car only to be again handled at points of destination. Treat each individual specimen as though it was an egg and your product will not only "stand up" under the wear and tear of handling and transporting, but will invariably bring you a better price, and enhance your reputation as a grower of fancy fruit.

Let us digress for a moment from the general topic of harvesting and marketing, and note more specifically the different methods and plans for packing the various sizes of oranges and lemons. To begin, the standard California orange box is $11\frac{1}{2} \times 11\frac{1}{2} \times 26$ inches outside measurements, divided into two compartments; the standard California lemon box is $10\frac{1}{2} \times 14 \times 27$ inches outside measurements, divided also into two compartments. Pomelos are packed in the orange box, while the Tangerines, Madarins and other kid glove varieties are packed in half boxes of the orange size, two of which are cleated together for shipment. In rare instances they are packed in quarter boxes, four being cleated together. For the benefit of growers, beginners in packing citrus fruits, and for the instruction of all interested, we submit plans on pages 40 and 41 for packing the several standard grades in which citrus fruits are handled by the trade in California, which are self-explanatory. Growers following these plans will find that they work out correctly.

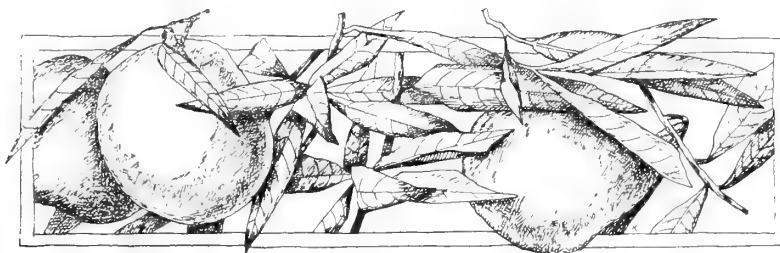


FUMIGATING CITRUS TREES FOR BLACK SCALE WITH HYDROCYANIC ACID GAS.



TWO-YEAR-OLD WASHINGTON NAVEL GROVE, FOOTHILLS OF SOUTHERN CALIFORNIA.

An Appreciation and a Promise.



IT has been said that the man who succeeds, does so because possessing the "know how." To no business does this aphorism apply so strongly as it does to Citrus fruit growing. Obviously, in its physical aspects it is one of the most alluring occupations of suburban life. When to this attractiveness is coupled material gain,—a handsome return for capital and labor—it immediately becomes an object appealing alike to our sense of gain as well as pleasure. No one division of our horticultural development combines utility and beauty in so wide a sense, and no other line of fruit growing in the United States can show a growth covering so small an area and only a trifle over a quarter century old, whose investments represent two hundred millions of dollars and an annual output of nearly twenty millions more. To have in only a small measure been instrumental in this development is with us a pleasant recollection; to be conscious of the fact that literally thousands of citrus trees now yielding bounteous crops are the product of the *San Dimas Citrus Nurseries*, is to us a satisfaction and a joy. So keenly appreciative are we of this distinction that it shall ever be our aim to supply the citrus fruit growers with the best trees that care, skill, experience and our natural advantages of soil and climate can possibly be made to produce. Our interests and ambitions are to serve all directly interested in citrus fruit farming, not only in the establishment of new groves, but also in the maintenance of those already in bearing. In this connection, we are always willing to lend the helping hand in the way of suggestion and consultation, realizing that that which is to the interest of the grower has a direct bearing on the future of this business. The success of citrus fruit production and marketing is of as much concern to us as the production of citrus trees. Feeling this way, we shall always appreciate rendering assistance to those who are part and parcel of its personnel and success.



POMELO TREE IN FULL BEARING.

The above illustration is a splendid object lesson of the bearing qualities of the citrus trees grown by this establishment.



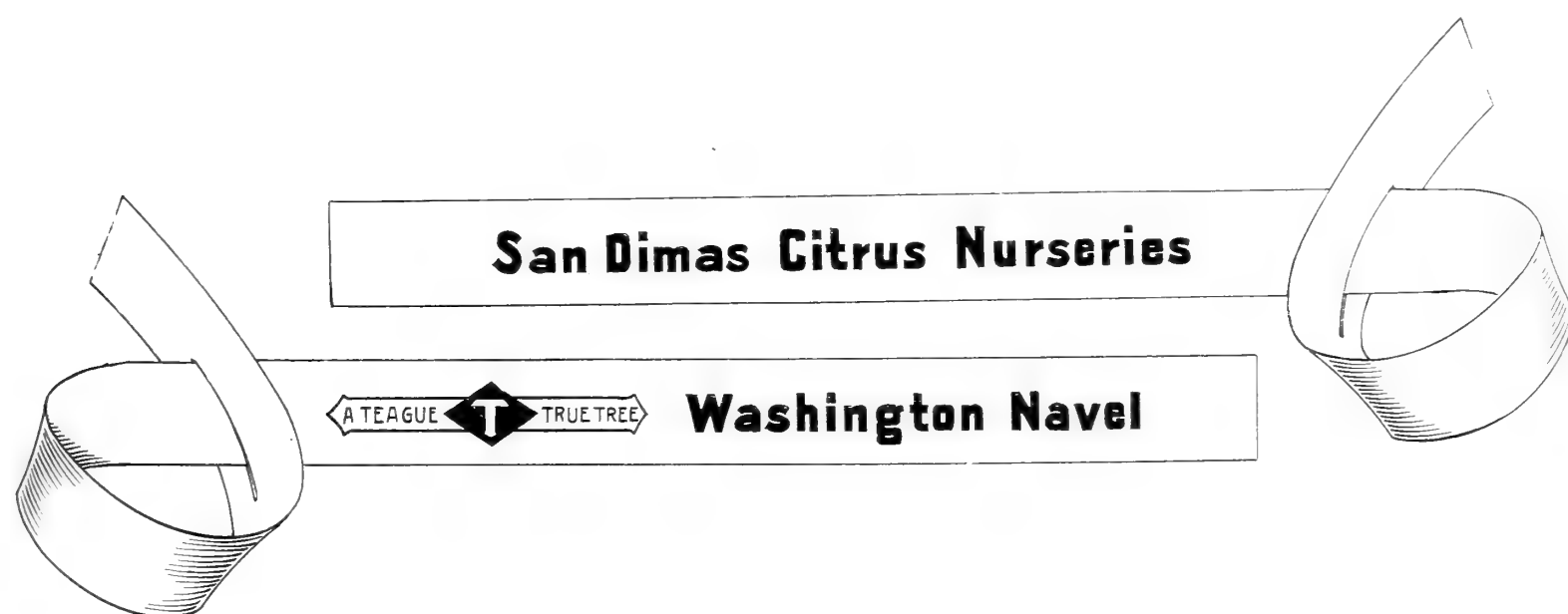
THE IMPERIAL POMELO IN FULL BEARING.



A CITRUS GROVE IN NORTHERN CALIFORNIA.

The Citrus Nurseries of Quality.

BEAR in mind that all trees coming from the San Dimas Citrus Nurseries possess the elements of quality in a superlative degree; that never knowingly is an inferior specimen allowed to leave the establishment; that the matter of quality permeates every department of this business,—quality in the seedling stock, in the selection of well developed buds cut from typical full bearing trees of each variety, in the development and



THE LABEL OF QUALITY—SHOWING FACE AND REVERSE SIDE.

training of the tree, in the growing, packing and shipping. Our trees having attained a world-wide reputation it is not at all surprising that itinerant tree peddlers and irresponsible dealers often represent their citrus stock as coming from our nurseries. In lieu of these facts, we label trees with our private label, a facsimile of which appears herewith. In order to protect the trade against imposition we so label all stock, and patrons are cautioned against accepting trees as coming from this establishment without this sign of quality.



LEMON BUDDED TO NAVELS. A WELL GROWN LEMON TREE. MARSH'S SEEDLESS POMELO.

The "Boss" Tree Protectors.

IN planting a citrus orchard it is of prime importance to afford the trunks of the young and comparatively branchless trees some protection from the burning rays of the sun until they attain sufficiently umbrageous heads to afford a shade. This can be economically and easily attained with the "Boss" Yucca Tree Protectors, which are of low cost and serve the purpose admirably. They are made from the wood of the Yucca palm, hence are light in weight as well as color, affording a perfect protection against rabbits, grasshoppers, borers, the winter frosts and summer suns. By reason of pliability they are readily adjusted, no tying or wrapping, while the porous nature of the wood allows of the free circulation of air. They are easily removed and not affected by the rain.

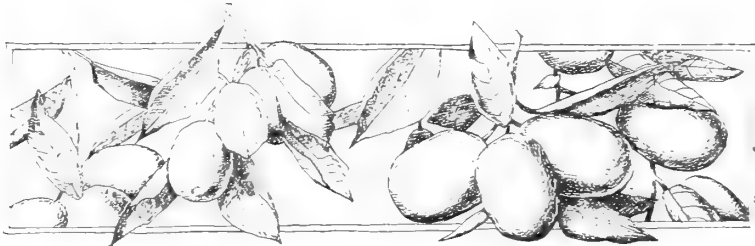
As a matter of fact they are cheap, efficient, durable, and just the thing for the purpose. Made in all sizes and widths. Free samples on application.



No.		Per 1000
4,	30 inches long, 7 inches wide	\$17.50
5,	24 inches long, 7 inches wide	15.00
6,	18 inches long, 7 inches wide	12.50
7,	16 inches long, 7 inches wide	11.25
9,	14 inches long, 7 inches wide	10.00
10,	12 inches long, 7 inches wide	9.00
11,	10 inches long, 7 inches wide	8.00
4,	22 inches	\$1.50 per inch per 1000
5,	18 inches	1.30 per inch per 1000
6,	13 inches	1.10 per inch per 1000
7,	12 inches	0.90 per inch per 1000
9,	10 inches	0.70 per inch per 1000
10,	9 inches	0.60 per inch per 1000
11,	inches	0.40 per inch per 1000

Trade supplied in any quantities.

SAN DIMAS CITRUS NURSERIES,
SAN DIMAS, CALIFORNIA.





WASHINGTON NAVEL ORANGE

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